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MICROpendium

Volume 5 Number 3

April 1988

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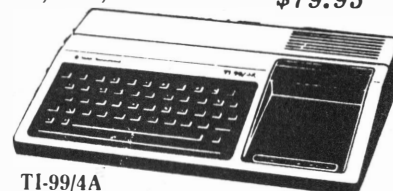
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Delphi TI NET: MICROPENDIUM

John Koloen.....Publisher
Laura Burns.....Editor

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Programming conventions

Here are some tips to help you when entering programs from MICROpendium:

1. All BASIC and Extended BASIC programs are run through Checksum, the numbers that follow exclamation at the end of each program line. Do not enter these numbers or exclamation points. Checksum was published in the November 1987 edition.
2. Long XBASIC lines are entered by inputting until the screen stops accepting characters, pressing Enter, pressing FCTN REDO, cursoring to the end of the line and continuing input.

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Comments

Updating programs, and benchmarks

Last month we promised an article about adapting a mouse for use with the TI, but it's not quite ready. We need some information on DSR routines from the author. When that's available, we'll publish it. It will allow those with a Super Sketch module to use a mouse with TI-Artist.

Meanwhile, you'll find an unusual number of programs in User Notes that are revisions of programs that previously appeared in MICROpendium. We think they're all significant upgrades and we hope you do, too. Even Regena gets in on this with three programs called San Francisco Revisited.

WAITING FOR THE HARD DISK CONTROLLER

Like many of you, we're waiting for delivery of our Myarc Hard and Floppy Disk Controller. Seems that the company has received a lot of orders and is having trouble keeping up. Can't say that I'm surprised. Being compatible with both the TI and the Geneve, it should have wide appeal. Walt Howe's article this month isn't about M-DOS this month, but about how to structure hard-disk directories. It is equally relevant to TI and Geneve owners who are contemplating or have purchased a hard disk system.

Speaking of the Geneve, here are two charts comparing the Geneve in M-DOS mode with five other computers — Apple Macintosh, IBM-PC and clones using an 8086 CPU and IBM-PC and clones using an 8088, TI99/4A and the Geneve in GPL mode

speed No. 5. The benchmark test on the Geneve was conducted last year by Myarc. Results of other computers came from an article published in *Byte Magazine*.

Benchmark for SIEVE of ERASTOSTHENES

Byte Magazine September 1981 and matching test by Myarc

Computer	MHz	CPU	Execution time
Geneve (M-DOS)	12	9995	0.95
Apple Macintosh	8	68000	1.12
IBM-PC & clones	8	8086	1.90
Geneve (GPL-5)	12	9995	2.08
IBM-PC & clones	5	8088	4.00
TI99/4A	3	9900	6.00

OPERATING SYSTEMS COMPARISON

Computers Systems News 12/4/87 and Geneve Tech. Ref. Man.

Features	M-DOS	OS/2	UNIX	MS-DOS	C-DOS
Multitasking	Y	Y	Y	N	Y
Graphical interface	Y	Y	N	N	N
Character interface	Y	Y	Y	Y	Y
Integrated commun.	Y	Y	Y	N	N
Memory locking	Y	N	Y	N	N
Price of software	Free	\$795	\$75-495	\$75	\$295

C-DOS is Concurrent DOS

—JK

Reviewed in MICROpendium

1984

February: B-1 Nuclear Bomber, Tandon TM-100 Disk Drive, Void, Beanstalk Adventure, Microsurgeon, On Gaming, Database 500.

March: Star Trek, Escape From Balthazar, Garkon's Getaway, Sky Diver, Mail-Call, Prowriter 8510 Printer.

April: Monthly Budget\$ Master, Budget Master, Home Budget, Thief, Donkey Kong, Khe Sanh.

May: Companion Word Processor, Q*Bert, Mad-Dog I & II, Programs for the TI Home Computer.

June: Creative Expressions Accounts Receivable/Accounts Payable, CDC 9409 Disk Drive, Starship Concord, Lost Treasure of the Aztec, ASW Tactics II.

July: Theon Raiders, Introduction to Assembly Language for the TI Home Computer, Game of Wit, Pole Position

August: TE-1200, Tower, Galactic Battle, Galaxy

September: Wycove Forth, 99/4 Auto Spell-Check, QUICKCOPYer, Wizard's Dominion, Anchor Automation Mk XII Modem

October: Killer Caterpillar, ZORK I, Defender

November: 9900 Disk Controller Card/Manager, Super Bugger, Transtar 120S printer, Floppy-Copy, Data Base-X

December: Gravity Master, Data Base Manager System, Learning 99/4A Assembly Language Programming

1985

January: Super Sketch, Foundation Computing 128K Card, PTERM-99, TI-Runner

February: Super Extended BASIC, Beginning Assembly Language for the TI, ZORK II

March: Morning Star Software CP/M Card, WDS/100 Winchester Disk Drive, Sketch Mate, BMC Color Monitor

April: 9900 Micro Expansion System, Disk + Aid, Gemini 10X-15X

May: Character Sets and Graphics Design, Draw 'N Plot

June: GRAPHX, DATA BASE I

July: Acorn 99, Advanced Diagnostics

August: Model Dow-4 Gazelle, TI-Artist, PC-KEYS, Not-Polyoptics' Bankroll

September: Midnite Mason, Myarc 32K/128K Card, GRAPHX Companion

October: 4A/TALK, Extende BASIC II Plus, XB Detective, Console Writer 2.a

November: Foundation Z80A/80-column cards, 9900BASIC, Adventure Editor

December: Display Enhancement Package, Triple Tech

1986

January: BITMAC, Starcross

February: Night Mission, Peripheral Diagnostic Module, BA-Writer

March: Super Duper, Tunnels of Doom Editor, Business Graphs 99

April: U.S. Open Tennis, PRBASE

May: 4A Flyer, GRAM Kracker, Artist's Companion

June: Myarc Disk Controller Card, Maximem

July: Horizon RAMdisk, Old Dark Caves, Funlwriter, TI99/4A Macro Assembler

August: JOYPAINT 99, GPL Assembler, TI99/4A Intern, GPL Linker

September: Mechatronic 128K Card

October: TI-Forth Utilities, CorComp Memory Plus

November: Submarine Commander, PEP, MAX-RLE

December: GK Utility I and II and GRAM Packer, X-10 Powerhouse, RAVE 99/101.

1987

January: MG DISKASSEMBLER, Myarc XBII

February: TI-Tax, Mechatronic Mouse

March: Wycove Forth version 3.0, DIJIT Systems RGB Conversion Kit, Spad XIII Flight Simulator

April: Geneve 9640, Disk Utilities

May: QS-Solitaire, Geneve 9640 (Part 2), Technical Drive, Console Calc

June: Character Sets and Graphic Design III, Writerease Ver. 1.1, 4A DOS, Prescan_It

July: Junkman Junior, Avatex 1200/1200hc modem, Bubble Plane

August: Prostick, The Brain, Rocketman, Menu Ver. 6.3

September: TI-IBM Connection, Super Extended BASIC

October: Fontwriter, Mechatronic 80-Column Card, Star NP-10 printer

November: Legends, Music Preprocessor, QS-Wheel, Spin-to-Win

December: Remind Me, Certificate 99, Myart-Art and Myarc Mouse

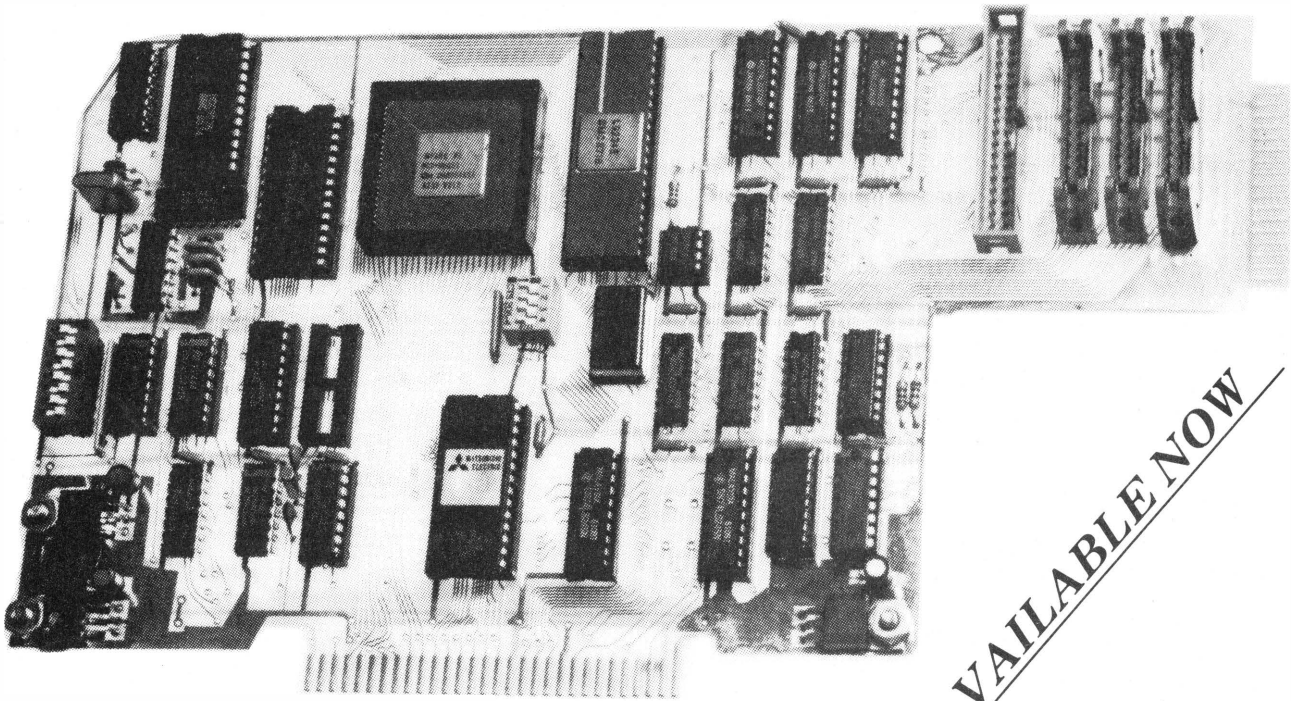
1988

January: Quik Font, EZ-Keys

February: Disk Utilities 4.0

March: Telco, String Master, Epson LX-800 printer

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Feedback

16 bit memory

Having finished reading the history of the Horizon RAMdisk in the February issue, I feel compelled to write concerning the mention of a 16-bit console 32K memory. I found it strange that in the interview with Bud Mills, MICROpendium implies that such a memory is unheard of.

I want to remind you of a letter that I sent in last year which concerned the very same thing. Though I had designed and published 16 bit memory articles in 1985-86, I certainly don't claim to be the originator of the idea. That article, however, implies that this is a recent invention of Horizon Computer Limited or Bud Mills Services and I do take exception to that.

Please don't think this letter represents a tub full of sour grapes; it doesn't. I don't mean any disrespect to anyone in our fine TI community, of which I am happy to be a part. As a matter of fact, I am the proud owner of an HRD+ myself. I do think, however, that a fine publication such as this should have its left hand know what its right hand is doing.

Ron Marrison
St. Thomas, Ontario, Canada

Grom port, ribbons and printer code

While cleaning will sometimes solve your problem with the grom port, it won't always correct it. Over the years, the constant pulling and pushing of the cartridges can cause the solder joints in the grom port to crack and all the cleaning in the world will not fix it. What needs to be done is to disassemble the console. Next, remove the "T" connector in the grom port and remove the metal shield covering the mother board. One must then carefully reheat and resolder the 36 connections on the back of the "T" connector and the 36 on the connector on the back of the mother board that the "T" plugs into. Of course, if you can find the one with the crack, you need fix only that one. Be careful not to create a solder bridge between any of the connectors.

Regarding the item on recycling ribbons in the User Notes (March 1988), while running the ribbons across a stamp pad may re-ink the ribbon, I'm not sure the ink on the stamp pad is the best in the world for

a dot matrix head. It is my understanding that the ink used on dot matrix ribbons contains a special ink that has a lubricant in it. The stamp pad ink probably doesn't have this lubricant, and over a period of time, this could cause problems.

Finally, there is an undocumented printer code for the SG-10 printer that will switch the printer between the IBM and Star modes. The code is:

ESC w 1 IBM Mode
ESC w 0 Star Mode

Many thanks to Bret Frohlich of Star for this one. It could come in handy for those who are using their SG-10s on both the TI99/4A and an IBM.

Joe Nuvolini
Colorado Springs, Colorado

DSK1 with Horizon RAMdisk

Normally, when a Horizon RAMdisk is designated as DSK1, the physical DSK1 drive is useless and cannot be used. It can, however, be used if, after a diskette is inserted in the physical DSK1 drive, the file is addressed as

DSK1. disk__name.file__name

This was discovered recently when the DSK1 drive was activated after I had neglected to add a number after DSK. I do not know if this will work with other RAMdisks or not. Just try it and see!

Charles E. Kirkwood Jr.
Clemson, South Carolina

Sharing good news

We are quick to complain and share bad news; it is really important to spread compliments when they are due and share the good news, too!

When I got ready to buy Geneve, I checked the pages of MICROpendium to see who was offering it. The ad that really caught my eye was that of L&M Systems, because of the statement, "You are a personal customer to us — NOT just an invoice number!" I had tried two other sources, without success, so I was disappointed when I called L&M and an answering machine came on the line. However, true to the message I heard, Les Merryman DID call back very shortly, and the next day my Geneve was on its way to me.

Les ships everything I order promptly, and answers all my questions cheerfully and patiently. It is a real pleasure doing business with him, and I highly recommend L&M Systems!

When I first got Geneve, it went against the grain to start the system with a disk in the drive. After all, we've always been cautioned NEVER to have disks in the drive when turning the computer on and off. Now, after much anguish when Geneve kept refusing to boot MDOS, I know why, thanks to my local computer expert. After ruling out everything else as the cause of the trouble, we checked the MDOS disks, and found that three of them refused to load, while the original master disk that came with the computer worked fine. He told me that there is a surge of power whenever the computer is turned on, and apparently that is enough to zap a disk sometimes, and the cure is to leave the drive door open when turning the computer on, then close it. We almost went nuts before we figured this out — after all, it just wasn't reasonable that THREE disks would all go bad at the same time, but it DID happen.

Another compliment, to Myarc for not waiting till all the software was complete before putting Geneve on the market. Sure, it's an inconvenience that Geneve won't do everything that the manual says it will. But we who bought it early knew that, and meantime we can enjoy what it DOES do, knowing that there is more to come. MyWord is a real joy to use, as is MyArt, and I am looking forward eagerly to other good things to come.

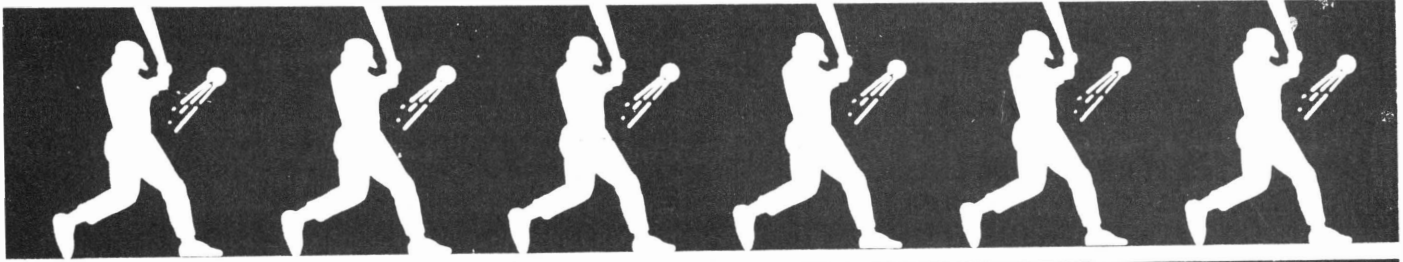
Claire Roberts
Clovis, New Mexico

'Sharp character' sought

In line with your request about future items, could you get some sharp character out there to do a bit of technical scoop about the 9928 VDP chip and how we might use it in replacement of the 9918, in the 4A, if it is possible.

Merle Vogt
Von Ormy, Texas

The Feedback column is for readers. It is a forum to communicate with other readers. The editor will condense excessively lengthy submissions where necessary. Mail Feedback items to: MICROpendium, P.O. Box 1343, Round Rock, TX 78680.



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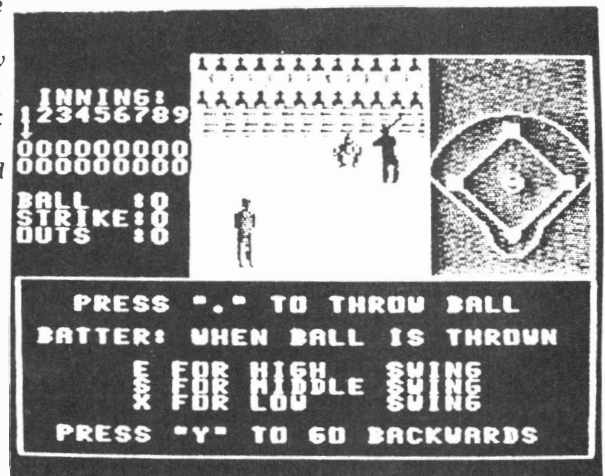
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BASIC

Bring San Francisco home

By REGENA

Years ago, TI-FEST was planned for San Francisco, and I wrote a program called "San Francisco Tourist."

It was published in the 99'er Magazine (I:5) and consisted of games with a San Francisco theme. The original program had three parts, but the published program had only two of the games. I was talking with Ray Kazmer (of "Woodstock" fame) at TI-XPO-88 at Las Vegas and mentioned the missing middle part of the program. He requested a copy of the original program, and I decided to resurrect the program. After I finally found the program in my unorganized file, I decided to share the program with MICROpendium readers.

This program has been revised from the previously published version, so I am calling it "San Francisco Tourist Revisited." It will now fit on disk with the TI99/4A.

Since I wrote it six years ago, I have learned more efficient programming, but most of the original programming is in place. The program is written in TI BASIC, so it has some of the "slow" features of BASIC games. The second game has quite a few commands between CALL KEY statements, so the response is not as good.

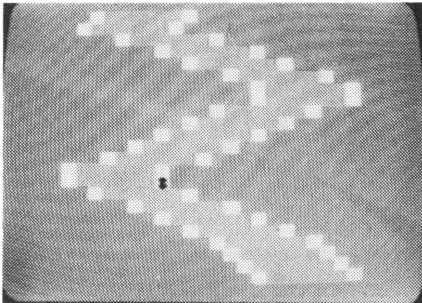
I love visiting (and revisiting) San Francisco and have used three tourist attractions in these games. First is Lombard Street, the crookedest street in the world. Your goal is to drive down Lombard Street without crashing. Use the left and right arrow keys to steer.

The second game is Seal Rocks. I could spend hours watching the seals in the ocean. This game has no time limit. You have a roll of film with 24 pictures to take. Use the arrow keys to aim the camera and then press ENTER to take a picture of a

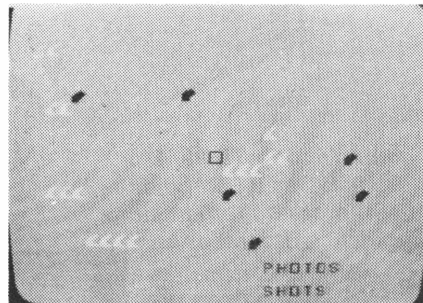
seal. Remember that seals jump, and they randomly appear and disappear. The white peaks represent ocean waves. When the roll of film is finished you will be told how many good photos you took (the others were of waves or ocean).

The third game is Muir Woods. North of San Francisco is a peaceful retreat of giant trees. In the game you look at trees in the park by moving with the arrow keys, then pressing ENTER to mark a tree. Try to mark as many trees on your map as possible before the computer counts to 100.

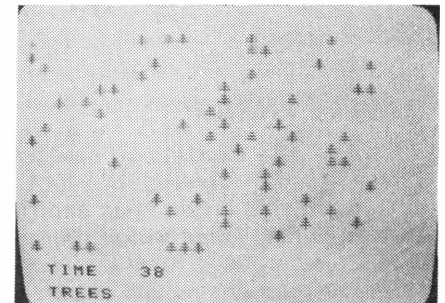
If you prefer to save typing effort, you may have a copy of this program by sending \$3 plus a blank cassette or diskette and a stamped, self-addressed mailer to REGENA, P.O. Box 1502, Cedar City, UT 84720. Be sure to specify the title "Revisited" and that you need the TI version.



Crookedest Street



Seal Rocks



Muir Woods

San Francisco Revisited

```

1 REM REVISITED !137
2 REM BY REGENA !071
3 DEF R19=INT(19*RND)+1 !200
4 DEF R28=INT(26*RND)+2 !199
5 DEF R=(-1)^(INT(4*RND))*(INT(3*RND+1))!132
6 CALL CLEAR !200
7 CALL CHAR(64,"18183C3C5A5A9999")!064
8 CALL CHAR(35,"0101020403030FFFF")!027
9 CALL CHAR(47,"1818181818FF")!214
10 CALL CHAR(36,"80601806FFF")!098
11 CALL CHAR(37,"01061860FFF")!092
12 CALL CHAR(38,"80804020100CFFFF")!053

```

```

13 CALL SCREEN(4)!149
14 PRINT TAB(12);"@ @":TAB(11);"#,%&"!014
15 PRINT : : : "** SAN FRANCISCO TOURIST **": : : :!002
16 P=300 !103
17 CALL SOUND(P,330,0)!112
18 CALL SOUND(P,349,0)!122
19 CALL SOUND(P,440,0)!114
20 CALL SOUND(4*P,392,0,131,10,165,8)!247
21 CALL SOUND(P,440,0)!114
22 CALL SOUND(P,494,0,165,10,196,8)!069
23 CALL SOUND(P,523,0)!116
24 CALL SOUND(P,440,0,147,10)!105
25 CALL SOUND(4*P,294,0,220,8,175,10)!248

```

```

26 PRINT "WHICH DO YOU WISH TO VISIT?": : " 1 CROOKEDST STREET": : " 2 SEAL ROCKS": : " 3 MUIR WOODS"!068
27 PRINT : : " 4 END PROGRAM": : : :!116
28 CALL CHAR(113,"FFFFFFFFFFFFFFFF")!062
29 CALL CHAR(41,"FFFFFFFFFFFFFFFF")!013
30 CALL CHAR(40,"0")!205
31 CALL KEY(0,K,S)!187
32 IF (K<49)+(K>52)=-1 THEN 31 !174
33 CALL CLEAR !200
34 ON K-48 GOSUB 42,108,190,265 !000
35 GOTO 13 !092

```

(See Page 12)

Monitor Sale

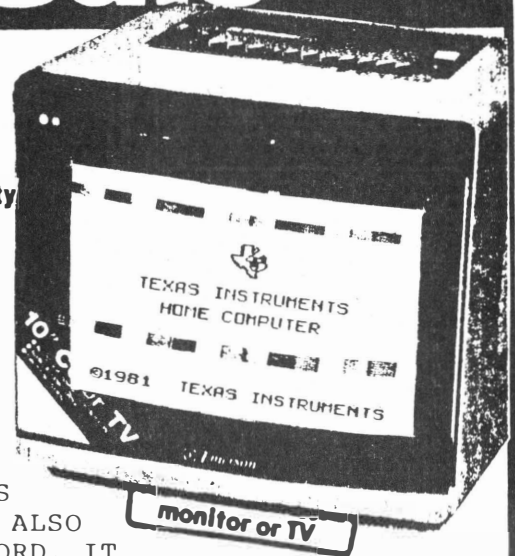
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REGENA—

(Continued from Page 10)

```

36 PRINT "PRESS ANY KEY"; !19
4
37 CALL KEY(Ø,K,S)!187
38 IF S<1 THEN 37 !Ø16
39 CALL CLEAR !2Ø9
4Ø RANDOMIZE !149
41 RETURN !136
42 PRINT " ** CROOKEDST STR
FEET **" !1ØØ
43 CALL CHAR(96,"387C7C38387
C7C38")!Ø75
44 CALL CHAR(97,"C3633618183
663C3")!Ø26
45 PRINT : "LOMBARD STREET
IS THE": "CROOKEDST STREET
IN THE": "WORLD. IT IS ON
E BLACK" !166
46 PRINT : "LONG ON A STEEP H
ILL. ": "YOUR CHALLENGE IS T
O DRIVE": "DOWN THE RED BRI
CK ROAD" !Ø54
47 PRINT : "WITHOUT BUMPING T
HE CONCRETE": "SIDES. USE
THE ARROW KEYS": "TO STEER.
": : !ØØ1
48 (=Ø !25Ø
49 GOSUB 36 !116
5Ø DATA 6,6,7,8,9,11,13,15,1
8,2Ø,2Ø,17,15,13,11,9,6,6,8,
11,13,16,19,2Ø !1Ø2
51 CALL SCREEN(3)!148
52 CALL COLOR(2,7,16)!232
53 CALL COLOR(9,2,11)!229
54 RESTORE 5Ø !143
55 FOR I=1 TO 24 !11Ø
56 READ J !225
57 CALL HCHAR(I,J,4Ø,8)!Ø24
58 CALL HCHAR(I,J+1,41,6)!21
Ø
59 NEXT I !223
6Ø CALL HCHAR(9,2Ø,96)!Ø1Ø
61 J=18 !Ø59
62 X=2Ø !Ø66
63 G=41 !Ø52
64 FOR I=1 TO 75 !116
65 IF I>59 THEN 71 !133
66 J=J+R !1Ø1
67 IF J<21 THEN 69 !12Ø
68 J=22-ABS(R)!13Ø
69 IF J>1 THEN 71 !Ø72
7Ø J=ABS(R)!146
71 PRINT TAB(J);"()"))))(" !
Ø24
72 CALL SOUND(-1ØØ,11Ø,1,-1,
1)!Ø87
73 CALL HCHAR(8,X,G)!Ø67
74 CALL KEY(Ø,K,S)!187
75 IF (K<>83)+(K<>68)=-2 THE
N 84 !1Ø4
76 IF K=83 THEN 81 !14Ø
77 X=X+2 !Ø42
78 IF X<31 THEN 84 !15Ø
79 X=31 !Ø68
8Ø GOTO 84 !163
81 X=X-2 !Ø43
82 IF X>2 THEN 84 !1ØØ
83 X=2 !Ø17
84 CALL GCHAR(9,X,G)!Ø67
85 IF G=41 THEN 91 !14Ø
86 IF G=96 THEN 91 !15Ø
87 IF G=32 THEN 1Ø2 !151
88 CALL SOUND(-5Ø,-5,Ø)!112
89 CALL HCHAR(9,X,97)!Ø55
9Ø C=C+1 !255
91 CALL HCHAR(9,X,96)!Ø54
92 NEXT I !223
93 PRINT "YOU MADE IT;": "N
UMBER OF CRASHES:";C !182
94 IF C>Ø THEN 1Ø5 !Ø98
95 DATA 33Ø,392,523,659,523,
659,659 !166
96 RESTORE 95 !188
97 FOR I=1 TO 7 !Ø62
98 READ S !234
99 CALL SOUND(15Ø,S,Ø)!115
1ØØ NEXT I !223
1Ø1 GOTO 1Ø5 !184
1Ø2 CALL SOUND(2ØØ,-5,Ø,4ØØ,
Ø)!154
1Ø3 CALL HCHAR(9,X,97,2)!229
1Ø4 PRINT "SORRY; THE CAR IS
DAMAGED": "BEYOND REPAIR" !Ø
57
1Ø5 GOSUB 36 !116
1Ø6 CALL COLOR(2,2,1)!172
1Ø7 RETURN !136
1Ø8 PRINT TAB(6);"** SEAL RO
CKS **" !Ø62
1Ø9 CALL CHAR(96,"FF81818181
8181FF")!Ø69
11Ø CALL CHAR(97,"FFBØFFFFFD
F9F1F1")!217
111 CALL CHAR(1Ø4,"ØC3E7FFEF
CF8FØF")!147
112 CALL COLOR(9,2,11)!229
113 PRINT : "ON THE COAST N
EAR SEAL ROCKS": "YOU CAN W
ATCH SEALS": "JUMPING AMONG
THE WAVES." !122
114 CALL CHAR(112,"Ø61C387Ø7
ØFØF8FE")!111
115 PRINT : "USE THE ARROW KE
YS TO AIM": "YOUR CAMERA. ":
: "PRESS <ENTER> TO TAKE A"
!185
116 PRINT : "PHOTO. YOU HAVE
A ROLL": "OF 24 SHOTS.": :
: !Ø15
117 GOSUB 36 !116
118 CALL SCREEN(6)!151
119 CALL COLOR(11,16,6)!Ø24
12Ø PRINT TAB(18);"PHOTOS":
: TAB(18);"SHOTS" !173
121 X=12 !Ø67
122 Y=16 !Ø72
123 CL=Ø !Ø7Ø
124 P=Ø !ØØ7
125 SH=Ø !Ø82
126 FOR I=1 TO ABS(R)+2 !132
127 CALL HCHAR(R19,R28,112,A
BS(R)+1)!114
128 CALL HCHAR(R19,R28,1Ø4)!
123
129 NEXT I !223
13Ø CALL HCHAR(X,Y,96)!141
131 CALL KEY(Ø,K,S)!187
132 IF K=13 THEN 172 !224
133 IF K<>69 THEN 137 !137
134 DX=-1 !Ø22
135 DY=Ø !Ø84
136 GOTO 148 !227
137 IF K<>68 THEN 141 !14Ø
138 DX=Ø !Ø83
139 DY=1 !Ø85
14Ø GOTO 148 !227
141 IF K<>88 THEN 145 !146
142 DX=1 !Ø84
143 DY=Ø !Ø84
144 GOTO 148 !227
145 IF K<>83 THEN 164 !16Ø
146 DX=Ø !Ø83
147 DY=-1 !Ø23
148 CALL HCHAR(X,Y,G1)!2Ø4
149 X=X+DX !2Ø3
15Ø IF X>Ø THEN 152 !166
151 X=1 !Ø16
152 IF X<2Ø THEN 154 !218
153 X=19 !Ø74
154 Y=Y+DY !2Ø6
155 IF Y>Ø THEN 157 !172
156 Y=1 !Ø17
157 IF Y<33 THEN 159 !228
158 Y=32 !Ø7Ø
159 CALL GCHAR(X,Y,G1)!2Ø3
16Ø IF G1<>1Ø4 THEN 163 !247
161 CALL HCHAR(X,Y,97)!142

```

(See Page 14)



TEX-COMP DEMO DISKS

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A NOTE ABOUT DEMO DISKS: TEX-COMP's demo disks are a collection of disks containing unique and entertaining features which we believe will help you get more out of your TI-99/4A. Some if not all of them are in the public domain. However, in certain cases, the author requests a contribution if you use and enjoy it. While you are not legally obligated to do so, we at TEX-COMP encourage your assisting these talented programmers if you enjoy their work. That is why we offer these disks at such a low price.

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A great collection of music and matching graphics. Great examples of music & sprite programming.

#6. EXBASIC MUSIC DEMO DISK

A two disk side collection of music & graphics that we consider some of the best.

#7. SPACE SHUTTLE MUSIC/GRAPHICS DEMO DISK

One of the real outstanding examples of programming. This disk has it all. Great graphics, music, and continuity. A real salute to the space program. It is almost like watching a movie!

#8. LOTTO DEMO DISK

This program randomly generates numbers for use in the various state lotto games and even runs a simulated lotto game. Easy to modify for pick 6 etc. games. A great learning and fun disk.

#9. MONA LISA PRINT OUT DEMO

This disk prints out a near-photo quality picture of that lady with the classic smile. We understand it was made by digitizing the original with a super powerful computer and converting the output to run on the TI-99/4A.

#10. GOTHIC PRINT DEMO DISK

This disk lets you type out a phrase on the screen and then print it out in gothic (old english) style. Looks like hand lettered calligraphy. Use for Invitations, announcements and business cards.

#11. ANIMATED CHRISTMAS CARD

This disk was actually originally sent to TEX-COMP as a greeting from master programmer Ray Kazmer. It was just too good not to share! One of the best examples of computer animation and graphics you will see on any computer!

#12. TI-99 OLOPY DISK

This great piece of programming actually simulates and plays the famous board game. For legal reasons we cannot name the game but "do not pass Go! but go directly to Jail!"

#13. STRIP POKER (PG RATED)

Play Poker against your TI-99/4A. When you win a hand she loses--a piece of her clothes that is. Don't worry about being a lousy poker player. Another file is included where you don't even have to know an ace from a king.

#14. FIGURE STUDY DEMO (PG RATED)

A collection of Playboy type centerfolds that can be printed out at your command. Use with any printer.

#15. STAR/EPSON PRINTER DEMO

This 2 sided disk contains a large collection of demo programs to put your Star/Epson compatible printer through its paces. Learn what control codes can do! Lots of text and graphics examples. Second side has a great tutorial on printer graphics with examples!

#16. SIDEWAYS PRINTOUT DEMO DISK

This program allows you to print out the material from your printer sideways. Great for spreadsheets, banners and large graphics. Second side contains some new enhancements for Multiplan not available on the TI upgrade.

#17. TI FORTH DEMO DISK

This demo disk was released by TI to show the power of Forth. Fantastic music and graphics. Ed/Assem & 32K required!

#18. TI DIAGNOSTIC DISK

This program loads into the Mini-Memory module and checks out your entire system. Much better than disk based diagnostics that cannot be used if a problem in the disk system is at fault. Complete documentation on second side.

#19. TI WRITER/MULTIPLAN UPGRADE DISK

This disk released by TI adds real lower case to your TI Writer, speed to your Multiplan and other enhancements. Easy to use. Just substitute new files for old! Instructions included.

#20. ACCOUNTS RECEIVABLE DEMO

This self contained prize winning program loads and runs in Exbasic and has all the features found in a professional accounting system. Complete with documentation and a second disk side with report generating programs.

SERIES II

#21. DATA BASE DEMO DISK

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REGENA—

(Continued from Page 12)

```
162 GOTO 164 !243
163 CALL HCHAR(X,Y,96)!141
164 CL=CL+1 !151
165 IF CL<8 THEN 131 !207
166 CALL HCHAR(R19,R28,104)!
123
167 CALL HCHAR(R19,R28,32,28
)!049
168 CALL HCHAR(R19,R28,32,28
)!049
169 CALL HCHAR(R19,R28,112,A
PS(R))!183
170 CL=0 !070
171 GOTO 131 !210
172 CALL SOUND(80,-1,0)!173
173 CALL HCHAR(X,Y,113)!180
174 CALL HCHAR(X,Y,96)!141
175 IF G1<104 THEN 178 !070
176 P=P+1 !025
177 G1=32 !101
178 SH=SH+1 !175
179 FOR II=1 TO LEN(STR$(P))
!097
180 CALL HCHAR(21,II+27,ASC(
SEG$(STR$(P),II,1)))!110
181 NEXT II !040
```

```
182 FOR II=1 TO LEN(STR$(SH
))!172
183 CALL HCHAR(23,II+27,ASC(
SEG$(STR$(SH),II,1)))!187
184 NEXT II !040
185 IF SH<24 THEN 131 !010
186 PRINT : : "TIME TO CHANGE
FILM": : "YOU GOT";P;"GOOD P
HOTOS": : !057
187 GOSUB 36 !116
188 CALL COLOR(9,2,1)!179
189 RETURN !136
190 PRINT TAB(6); "** MUIR WO
ODS **" !096
191 CALL CHAR(96,"1C10087F08
142222")!025
192 CALL CHAR(97,"10107C101"
)!127
193 CALL COLOR(9,7,1)!184
194 CALL CHAR(104,"1038107C1
0FE101")!002
195 CALL CHAR(105,"FF81A5999
9A581FF")!153
196 CALL COLOR(10,13,1)!015
197 PRINT : : "MUIR WOODS IS
A HEAUTIFUL": : "FOREST OF GI
ANT TREES" !177
```

```
198 PRINT : "NORTH OF SAN FRA
NCISCO." : : "TAKE A TOUR AND
MARK AS": : "MANY TREES ON YO
UR MAP AS" !129
199 PRINT : "YOU CAN. MOVE B
Y PRESSING": : "THE ARROW KEY
S; MARK TREES": : "BY PRESSIN
G <ENTER>." : : : !237
200 GOSUB 36 !116
201 CALL SCREEN(12)!197
202 PRINT "TIME": : "TREES" !
079
203 FOR I=1 TO 70 !111
204 CALL HCHAR(R19,R28,104)!
123
205 NEXT I !223
206 SH=0 !082
207 P=0 !007
208 X=2 !017
209 Y=2 !018
210 G=32 !052
211 CALL HCHAR(2,2,96)!210
212 CALL SOUND(150,1397,4)!1
96
213 CALL KEY(0,K,S)!187
214 IF K=13 THEN 251 !047
215 IF K<>69 THEN 219 !219
216 DX=-1 !022
217 DY=0 !084
218 GOTO 230 !053
219 IF K<>68 THEN 223 !222
220 DX=0 !083
221 DY=1 !085
222 GOTO 230 !053
223 IF K<>88 THEN 227 !228
224 DX=1 !084
225 DY=0 !084
226 GOTO 230 !053
227 IF K<>83 THEN 230 !226
228 DX=0 !083
229 DY=-1 !023
230 IF G>=104 THEN 232 !010
231 G=97 !063
232 CALL HCHAR(X,Y,G)!155
233 X=X+DX !203
234 IF X>1 THEN 236 !251
235 X=1 !016
236 IF X<20 THEN 238 !046
237 X=20 !066
238 Y=Y+DY !206
239 IF Y>2 THEN 241 !002
240 Y=2 !018
241 IF Y<31 THEN 243 !054
242 Y=31 !069
243 CALL GCHAR(X,Y,G)!154
(See Page 16)
```

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A PUBLICATION OF THE
WESTERN NEW YORK 99ERS
Written by
Harry Thomas Brashear

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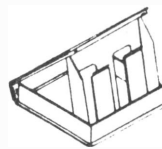
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Trials of a c99 beginner

Inputting and outputting files

By CHARLES KIRKWOOD JR.

Did you ever need an article in a magazine but you didn't remember the complete title or the month? How many times have you looked through MICROpendium all the way back to the beginning trying to locate some special article? Have you ever wished you had an index of articles and tips about TI99/4A from different magazines or newsletters and a method of locating an article quickly?

The first example this month is a big help in solving this problem. It is a program designed to search the records of a file for given keywords. The file could be an index of articles in magazines with the name of the article, its location, and perhaps some words to describe the content of the article. This program could also be used to search a directory which might contain names, addresses, phone numbers, nicknames, etc. This could be a valuable help in refreshing one's memory if he needed a name and could only remember a nickname or a phone number? A home inventory, or a hobby inventory such as model railroading or coins, could be searched for particular items. Such a search program should be fast — this one is — not instantaneous but a lot faster than BASIC!

Only display/variable 80 files will be used, so each record may have up to 80 characters. Spaces and punctuation in each record are optional. Records in the file might look like this:

```
BASIC PROGRAMMING REMINDER HINTS REGENA
HCHAR VCHAR CHR$( ) M JAN 88
TRIALS OF A c99 BEGINNER INTEGER ARITHMETIC
KIRKWOOD PRINTF CONV;C M JAN 88
WORKING WITH LOGO LET THE TURTLE DO FRACTALS
JOHNSON M JAN 88
COMPUTER MAINTENANCE CLEANING MODULE CON-
TACTS RUTLEDGE M JAN 88 PART I
PRINTING IN MULTIPLE COLUMNS MULTICOL BROWN
XBASIC PART I M JAN 88
```

Each record is somewhat limited and will contain very little more than the title and location. The best way to build a D/V80 file, in my opinion, is by using the E/A Edit feature. Full-screen edit is used, corrections and additions can be easily made.

Now back to the program, a file is opened by:

```
unit = fopen(name,mode);
```

Where **unit** is a file descriptor or unit number which is returned

for use with the file I/O functions, **name** is the file name, and **mode** is the type of access. Name and mode must be strings or pointers to strings.

Currently, the following modes are supported: display/variable, display/fixed, and display/relative, as:

dis/var	dis/fix	dis/rel
"r"—read	"R"—read	"I"—read
"w"—write	"W"—write	"O"—read/write
"u"—update	"U"—update	"a"—append

The mode character may be followed by a 1- to 3-digit record length. A default of 80 is assigned if this number is omitted. When a record length of zero is specified for an input file, the actual record length of the file is utilized.

A file is closed with:

```
fclose(unit);
```

Only four files can be opened simultaneously and no more than three may be disk files.

Here are some of the file I/O functions available in c99. Note the similarity to those I/O functions used earlier.

```
c=getc(unit); /*reads one character*/
c=putc(c,unit); /*writes one character*/
c=fgets(buff,col,unit); /*reads a string*/
c=fputs(string,unit); /*writes a string*/
c=fread(buff,len,unit); /*reads a record*/
c=fwrite(buff,len,unit); /*writes a record*/
fprintf(unit,arg1,arg2,...); /*write*/
```

The arguments **col** and **len** refer to the file lengths. At most, col-1 characters will be transferred, a NULL character is appended to the end of the line. With **fread()**, not more than **len** bytes will be transferred, and a NULL byte is not appended to the end of the line. More details on each of these functions can be found in Clint Pulley's documentation with the c99 compiler. It is suggested that some experimentation be made to see exactly how each of these functions can be used. Several of these functions will be used in the two programs in this article.

Getting back to the first example, up to and including five keywords may be used with the Search Program. Follow the prompts as they are given:

input disk and file name

(See Page 18)

REGENA—

(Continued from Page 14)

```
244 CALL HCHAR(X,Y,96)!141
245 SH=SH+1 !175
246 FOR II=1 TO LEN(STR$(SH))
247 CALL HCHAR(21,II+9,ASC(S
248 NEXT II !040
249 IF SH=100 THEN 260 !183
250 GOTO 213 !036
```

```
251 CALL SOUND(100,-2,0)!216
252 IF G<>104 THEN 245 !024
253 CALL HCHAR(X,Y,105)!181
254 G=105 !102
255 P=P+1 !025
256 FOR II=1 TO LEN(STR$(P))
257 CALL HCHAR(23,II+9,ASC(S
258 NEXT II !040
```

```
259 GOTO 245 !068
260 PRINT "TIME IS UP.": "YO
261 GOSUB 36 !116
262 CALL COLOR(9,2,1)!179
263 CALL COLOR(10,2,1)!220
264 RETURN !136
265 PRINT "HAVE FUN IN SAN F
266 END !139
```

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c99—

(Continued from Page 16)

input number of keywords

input number of matches required

input keyword(s), terminate each with <ENTER>

The number of matches required can be equal to or less than the number of keywords. If the number of keywords is 3 and the number of matches required is 2, then all article titles will be printed when any 2 out of the 3 keywords match.

Since this is a string or string segment search, a complete word does not have to be used as a keyword. For example, if a keyword was INT, four records from those given would be printed, the first, second, fourth, and fifth, since HINTS, INTEGER, MAINTENANCE, and PAINTING contain the segment INT. If the one keyword was HINT, however, the first record would be printed. For the keyword BASIC, the first and fifth record would be printed, while XBASIC would cause the fifth record only to be printed. The fewer the number of keywords, the more records which might contain these keywords.

The search is made in the function `findstr()`. The first letter of a keyword is compared to successive letters in a record. If the letters match, each successive letter of the keyword is compared to successive letters in the record. If there is no keyword match, the process is repeated for the remaining letters in the record to search for a match. If a segment is matched, the function returns a value of 1, otherwise a value of zero (0) is returned. The search is made for all given keywords. A record is printed when the required number of keywords match. The program continues to the next record and the process is repeated. This is fast since the letters of the keyword are compared to letters in the record only after the first letter of the keyword matches a letter in the record.

```
/*SEARCH PROGRAM*/
#include DSK1.STDIO
#include DSK1.CONV
#include DSK1.STRING
main()
{
    char buff[81];
    int a,b,col,in,i,out,pr,k,fn,r;
    int n,nr,blen,j,z,m,keyln;
    int key[6][20]; /*keywords*/
    int keylen[6]; /*length of keywords*/
    int kk[20]; /*one keyword for argument*/
    puts("SEARCH PROGRAM by Charles Kirkwood\n\n");
    puts("input disk and file name ");
    fn=gets(buff);
    in=fopen(fn,"r");
    col=81; /*initialization*/
    b='a';
    putchar(10);
    puts("input number of key words ");
    x=gets(buff);
    n=atoi(x);
    putchar(10);
    puts("input number of matches required ");
    x=gets(buff);
    nr=atoi(x);
```

```
    putchar(10);
    puts("input key word(s), terminate each with <ENTER>");
    putchar(10);
    for(i=1;i<=n;++i) /*input keywords*/
    {
        j=0;
        while(b!=10)
        {
            b=getchar();
            key[i][j]=b;
            ++j;
        }
        b='a';
        keylen[i]=j-1; /*lengths of keywords*/
    }
    putchar(10);
    while(b)
    {
        r=0;
        b=fgets(buff,col,in); /*input record*/
        blen=strlen(b)-1; /*last subscript of b*/
        for(m=1;m<=n;++m)
        {
            keyln=keylen[m]; /*only one length as argument*/
            for(j=0;j<keyln;++j)
                kk[j]=key[m][j]; /*store one keyword*/
            k=findstr(n,b,blen,keyln,kk);
            r=r+k;
            if(r==nr)
            {
                puts(b);
                putchar(10);
                putchar(10);
            }
        }
        fclose(in);
    }
    findstr(n,b,blen,keyln,kk)
    int blen,n,keyln;
    char b[];
    int kk[];
    {
        int i,j,p,q,s,k;
        for(i=1;i<=n;++i)
        {
            p=blen-keyln+1;
            j=0;
            while(j<=p)
            {
                if(kk[0]==b[j])
                {
                    s=0;
                    while((s<keyln)&(kk[s]==b[j+s]))
                        s=s+1;
                }
            }
        }
    }
```

(See Page 20)

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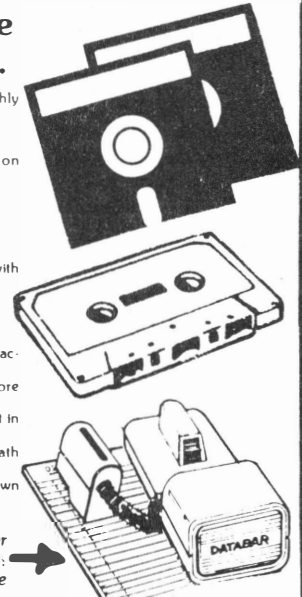
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c99—

(Continued from Page 18)

```

if(s==keyln)
{
    k=1;
    return(k);
}
j=j+1;
}
k=0;
return(k);
}

```

Time and memory can be saved by deleting #include DSK1.CONV;C and #include DSK1.STRING and typing the two functions needed, atoi() and strlen(), from the function libraries CONV;C and STRING after the function findstr(). There is no need to compile and assemble all of the functions in these libraries.

The two functions atoi() and strlen() are copied here for convenience:

```

atoi(s)          strlen(s)
char *s;          char *s;
{
    int sign,n;    {
    while(*s==' ')    int n;

```

★★



APRIL 30TH, 1988

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---more vendors expected---only a few tables left---	---other seminars/demos of games, utilities, and applications and graphics programs---

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★★

```

++s;
sign=1;
if(*s=='-')
{
    sign=-1;
    ++s;
}
if(*s=='+')
    ++s;
n=0;
while((*s>='0')&(*s<='9'))
    n=10*n+*s++-'0';
return(sign*n);
}
while(*s++)
    ++s;
return(n);
}

```

To form a program module so that E/A 5 can be selected, the following object files must be loaded in the link-edit step: C99PFI, object program, CSUP, CFIO, C99PFF, and SAVE. The object file CFIO contains file I/O functions.

Now comes the hard part — to type up a data file with TI99/4A article titles!

The second program this month is very useful. It is a file I/O utility program which can be used to copy a D/V80 file or append one file to another. It is this second feature — to append — that makes this program so useful. However, it cannot be used to copy or append from one disk to another unless you have more than one disk drive. For one-drive users, it can still be useful as long as both files are on the same disk.

This program was a great help in writing this article. The text was written and the programs appended to the article without additional typing. The programs were then moved to their proper places in the article.

```

/*FILE I/O PROGRAM*/
#include DSK1.STDIO
extern fprintf();
main()
{
    char buff[81];
    int dk,in,out,col;
    int m,df,b,d;
    col=81;
    puts("FILE I/O PROGRAM by Charles Kirkwood\n\n");
    puts("This utility program will copy a file\n");
    puts("and also append one file to another\n");
    puts("The INPUT DISK AND FILE is the file\n");
    puts("to be copied or appended.\n\n");
    puts("INPUT DISK AND FILE: ");
    df=gets(buff);
    in=fopen(df,"r");
    putchar(10);
    putchar(10);
    puts("OUTPUT DISK AND FILE: ");
    d=gets(buff);
    putchar(10);
    putchar(10);
    puts("Release alpha lock\n\n");
    (See Page 21)
}

```

c99—

(Continued from Page 20)

```

puts("MODE OF OUTPUT TO FILE: (w/a) ");
m=getchar();
while((m!='w') & (m!='a'))
{
    putchar(10);
    putchar(10);
    puts("TRY AGAIN!\n\n");
    puts("MODE OF OUTPUT TO FILE: (w/a) ");
    m=getchar();
}
if(m=='a')
    out=fopen(d,"a");
else
    out=fopen(d,"w");
b=fgets(buff,col,in);
while(b)
{
    fprintf(out,"%s\n",b);
    b=fgets(buff,col,in);
}

```

```

    putchar(10);
    fclose(out);
    fclose(in);
}

```

Even though the function **PRINTF** is not used with this program, it was found that it was necessary to load it along with **FPRINTF** in order to execute the program. To form a program module so that E/A 5 can be selected, the following object files must be loaded: C99PFI, object program, CSUP, CFIO, PRINTF, FPRINTF, C99PFF, and SAVE.

I wish to thank those who have stuck with me so far with these c99 articles. Hope that you have gotten something from them. You can probably guess that I enjoy puzzles. (Sometimes the language itself is a puzzle!) Some years ago when I taught several industrial men beginning FORTRAN, the best student in the class was an amateur magician. He said that his success was due to the fact that he treated it just like another magic trick. The c99 language is interesting and I have learned a lot from running c99 programs and writing the articles. Please forgive my oversights and mistakes — will do my best to keep them to a minimum.

Delphi sets contests for TI

The TI NET on Delphi is holding a software contest open to owners and programmers of TI computers. Entries will consist of graphics, utilities, and telecommunications programs and the winners will be announced in the spring of '88, according to TI NET systems manager Jeff Guide. TI NET is also holding a hardware contest. From simple to complex, all hardware projects are eligible.

The TI NET contains a special section of text files for computer club newsletter editors to download continues to grow each week. Such nationally known authors as Walt Howe of the Boston Computer Society, Richard Fleetwood of the Forest Lane Users Group in Dallas and Art Byers of the New York Area CW 99'ers are represented with new articles each month, Guide says.

A public opinion POLLING area for the exchange of opinions with other TI or 9640 users is a TI NET feature not available on any other communication service, Guide notes.

The TI NET Shopping area is also available, he points out.

The national user group Mid-Atlantic 99ers is available for users to join online. No other communication service provides a home for a TI/Geneve user group, ac-

cording to Guide.

Another exclusive to this communication service, he says, is the TI NET Surcharge Software area, which makes it possible for shareware or fairware authors to collect money for their programs.

BATCH MAILTHRU allows users to communicate with users on other networks for a small fee, a service also not available on any other communication service, Guide says.

MICROpendium readers can now save \$20 when they join DELPHI, Guide says. As a special offer to users of Texas Instrument's computers, DELPHI has set up an immediate online membership registration, limited to MICROpendium readers, providing a lifetime DELPHI membership for only \$29.95 — a \$49.95 value. The membership package includes a copy of Simon & Schuster's newly released, 500-page Delphi: The Official Guide (retail \$19.95), a command card, and a credit for one hour of use at Delphi's standard connect rates.

With Delphi's no risk policy, the membership can be cancelled and the handbook returned within 30 days of the date the account was established, and Delphi will return the membership fee. Billing is only for the time used in excess of the initial one

hour credit.

Standard Delphi usage rates include all communication charges and there are no premium charges for access at 1200 or 2400 bps. Home time is weekday evenings and weekends with a basic rate of 12 cents per minute or \$7.20 per hour. Office time is 7 a.m. to 6 p.m. weekdays, and the rate is 29 cents per minute or \$17.40 per hour.

Delphi Advantage Rates are as low as 9 cents per minute, or \$5.40 per hour, for domestic U.S. access via Tymnet, Telenet, or direct dial.

Through MICROpendium, readers can sign up for this offer immediately online.

When readers sign up online, the lifetime membership can be charged to Visa, Mastercard, or the American Express card. Delphi Member Services will verify the information provided and activate the account, usually within one business day. The membership fee and ongoing usage can be billed directly by calling Delphi Member Services to request a credit application.

To sign up online to Delphi — Dial (800) 365-4636 or (617) 576-2981. Once connected, press Return twice. At PASSWORD prompt, type TINET and press Return.

(See Page 22)

Enthusiasm marks Boston Fayuh

By WALT HOWE

The Third Annual Boston Fayuh April 9 was attended by about 350 enthusiastic Tiers. All the vendor tables were full and several of the late registering dealers had to settle for less space than they had requested. Sales were brisk all day long at the tables, and no one would get the impression that enthusiasm is waning in the TI community.

Myarc, represented by Lou Phillips, attracted a great deal of attention, as usual, with its new Hard and Floppy Disk Controller, but the new products on display were not all from Myarc by any means.

Databotics was there with the Grand RAM, Bud Mills brought the new, large Horizon cards, and RAVE did brisk sales with its keyboards and speech synthesizer cards and showed off its new RAMcard. Mark Van Coppenolle took orders for his new Gramulator, too, which is nearing release. In addition to having all the capability of the no longer manufactured GRAM Kracker, the Gramulator will also emulate the MBX system.

While the products for sale and on display attract many visitors, the people themselves are the real attraction. Coming

from as far away as Australia, Canada and across the United States, the Fayuh attracted many of the hard core supporters who have kept the 99/4A world alive and exciting.

Charles Earl was there from Canada with his new terminal emulator, TELCO. Warren Agee was there from Detroit with his soon to be released database program, First Base. Terrie Masters and Tom Freeman, of the Los Angeles User Group, trekked all the way across the country to set up a table and share the fun and enthusiasm. Scott Darling crossed the country to show the flag for the GENIE network and he set up alongside Jim Horn and Jonathan Zittrain of CompuServe and shared the phone line with them. The Ottawa User Group, as usual, showed the rest of the long distance visitors staying at the Days Inn motel how to have a good time.

In the formal presentations in the auditorium, Jim Horn reminisced about the earliest days of telecommunications and the part TI played in its growth along the way. Lou Phillips followed, others who have helped Myarc along the way, particularly Boston host Peter Hoddie. A new business software package to come from Myarc was

announced and explained and the Hard and Floppy Disk Controller was given a thorough showing.

Barry Traver averred that we should not be called orphans at all, because there has been more exciting development without Texas Instruments than there was with it, and he traced the efforts and organization that have kept it all very much alive.

Johnathan Zittrain put together a panel of experts, who addressed the future of the TI world and the directions we can expect to see in the months and years to come.

Australian user wants to visit other users

G.A. Shipton of Australia, visiting the United States in April, says he plans another trip later in the year and would like to attend TI user group meetings and other events, as well as individual users.

Shipton visited the MICROpendium office April 6. He said he had recently been in Salt Lake City, Utah; Tuscon, Arizona; Seattle, Washington; and Oklahoma. He was planning to visit Bill Knecht of the Houston Users Group and to visit the New England TI Fayuh.

He says he would like a voice contact number and major cities and direction along which highway for his destination (e.g., Round Rock is 15 miles north of Austin, Texas, along IH 35).

Any TI user from any country may write Shipton at 8 Teesdale Crescent, Plympton Park 5038, South Australia.

Texaments releases new products

Texaments has added to its continuing series of TI-Artist and CSGD enhancement software, according to Steve Lamberti, Texaments president.

Three new two-disk sets in the Artist's Companion series, Artist's Companion 4, 5 and 6 have been completed. Each set contains original fonts and graphics. As is the case with the other disks in the series, each font and instance can be altered and made part of any picture or design of the user's choice using the TI-Artist drawing system, Lamberti says. The price is \$9.95 per set plus \$2.50 shipping and handling. Until June 1, a special offer is in effect whereby the three sets can be ordered for \$26 total plus shipping and handling.

The company has also signed an agreement with Paul Coleman of Nameloc Software to obtain manufacturing and distributing rights for his Designer Labels, TI-Artist Graphics Support and CSGD Graphics support. The Designer Labels package

(see Newsbytes Oct. 1987) includes two complete sets of monogrammed instances designed to be used for creating personalized return address labels, Lamberti says. It is part of the TI-Artist Productivity Series. Price is \$9.95 plus \$2.50 shipping.

Users of Designer Labels originally purchased from Nameloc may update their programs by sending the original disk and a \$4.50 update fee plus shipping to Texaments, Lamberti says.

TI-Artist Graphics Support and CSGD Graphics Support have been renamed Artist's Companion No. 7 and CSGD User Disk No. 7, respectively. Both packages consist of two-disk sets consisting of a variety of original fonts and small and large graphics. Price for Artist's Companion No. 7 is \$9.95, and for CSGD User Disk No. 7 is \$10.95, plus \$2.50 shipping for each.

For further information, or to order, write Texaments, 53 Center St., Patchogue, NY 11772, or call (516) 475-6463.

DELPHI—

(Continued from Page 21)

A brief tour of Delphi and prompts for the information needed to establish a Delphi billing account will appear. Delphi is also accessible worldwide via Tymnet, Telenet, and Datapac. For more information dial DELPHI Member Services at (800) 544-4005, or at (617) 491-3393 from within Massachusetts or from outside the U.S.

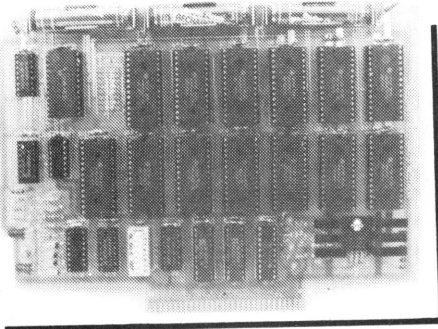
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The Operating System (Thanks to
John Johnson and Mike Ballman of
the Miami Users Group) allows the
Ramdisk to be divided into TEN
logical drives or less. Only two
DSK (numbers) are used, the
remaining drives will respond to
DSK(name). The Menu program (Ver.
7.3) allows for 9 calls plus
fifteen menu selections that you
can edit on screen to customize
the way you want it to appear - no
more sector editing. XB programs
can now be loaded from a call.

The HRD+ Kits include:
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Bulletin boards open new vistas

By JERRY MACDONELL

What would you say if I told you that you have a world of TI software waiting for you and all you have to do to get it is to make a phone call? I am, of course, speaking about those marvelous pieces of electronic artwork, BBSes.

What is a BBS? A BBS (short for Bulletin Board System) is an access port to the latest software and to current events. I tend to look at them as a cork-board with clusters of notes on it. Now organize these notes, put headings on them and computerize them. The major difference is that you have full control of those messages and you get to use the software "swap shop" known as the file section.

To use a BBS, you need a few simple items:

- 1) A modem. My first modem was a 300 baud (bits per second) unit. If you are planning to buy a modem, I recommend 1200 baud or higher. It is faster and more efficient.

- 2) An RS232 interface and a modem (null) cable.

- 3) A terminal emulator. I will review some of the emulators in future articles. Of the half-dozen emulators that I have tried, the best three I have found are Telco, 4A/TALK and Paul Charlton's Fast Term.

Last but not least, you need the phone number of a BBS. Local computer stores usually know phone numbers for local BBSes. Boot up your term program and dial the BBS following the modem's instructions on calling a remote computer. For most "smart" modems, the command is accomplished by typing ATDP, then typing in the phone number. ATDP stands for ATtention Dial Pulse, ATDT for touch tone dialing. It may take a few tries to get on a board; one finds that they are usually busy. Once you connect with the BBS, press ENTER. Most boards require this to sense what baud you are calling at. You will see a short title screen and finally receive a prompt:

USER NAME,ID# OR NEW > _

This prompt varies with the BBS. Usually you enter NEW if you are a first-time user. Sometimes only your User Name is required. As a first time user you will be asked a few short questions, the most important of which prompts you to enter a password. It can be any word of your

choice, but *remember it!* Without your password, you can't get back onto the BBS. I suggest that you use a different password on every BBS that you call and keep that word next to the phone number or BBS name on your list. (Trust me. If you start calling BBSs you will have a list!)

When all of the entry questions have been filled out, you will come to a prompt that asks you for a command. There is, most of the time, a list of commands before this prompt. If there isn't, type a question mark. Most commands are self explanatory. You may even find (H)elp if you need it.

The two major functions of the BBS are message bases and file transfers. When you select the letter command for a message base and press ENTER, you will come to a sub-menu that will allow you to manipulate the messages or enter your own. Messages come in two forms; public and private. They have headings that give the message number, the subject, who it is from and who it is to. Messages range from "For Sale" to arguments over the presidential elections. You will find information here that's invaluable to you. New BBS numbers are often posted here.

The File section contains a list of file names and descriptions. If you see a file you want, you can use a file transfer to download it from the board to a disk on your end. Downloading uses a transfer protocol. You will find explanations of how to make a file transfer in your terminal emulator's documentation. Select Download, enter the filename to download, the file transfer protocol desired (XMODEM is best, because you get fewer errors. A transfer protocol is nothing more than a system of error checking.), enable your TE's file transfer section and set it to receive.

It is only fair to trade, so BBSes have uploads. It is the same as downloading, except that you are sending your program up to the remote computer.

Not all boards have TI software; many are specifically IBM, Atari or Commodore, while others are strictly TI.

For a grand finale, I will review a BBS. I will review one a month, stating its good or bad points, and what it offers to the user.

If you wish to have your BBS reviewed or would like to know of TI bulletin

board numbers in your area, write or call Jerry Macdonell, 2464 Hillside Drive, Kirkwood, NY 13795, (607) 775-1566.

BBS NAME: Champaign FIDO

PLACE: Champaign, Illinois

SYSOP: General — Jim Lewis (bubble)

TI Forum — Marc Levine

BAUD: +1200

PHONE NUMBER: (217) 359-3431

EASE OF USE: A

FILE SECTION: A++

Champaign FIDO is run on an IBM compatible computer, but is dedicated to the TI99/4A and the Commodore Amiga. The file section gains an A++ because it is the largest list for any system I have seen this side of a network such as CompuServe.

NEXT MONTH: Fast Term 1.16 and The 39 Steps BBS reviewed.

DIJIT releases video processor card

DIJIT Systems has released a new Advanced Video Processor Card for the TI99/4A Peripheral Expansion Box.

According to Tom Spillane of DIJIT Systems, text and high resolution graphics are presented in RGB in up to 512 colors. Word processing and spreadsheets are in 80-column format. The card also supports a mouse and light pen.

The ABPC was designed with 192K video RAM for use with a GENLOCK for graphics overlays and titling on video, Spillane says. He says that it will be capable of real-time video digitizing in conjunction with DIJIT's forthcoming DIJIT-EYE-ZER. GENLOCK and DIJIT-EYE-ZER are tentatively scheduled for the third quarter of 1988.

"We'll be able to capture pictures from other computers, such as the Atari ST," Spillane notes.

The AVPC sells for \$220 plus \$5 shipping and handling in the continental United States (California residents add 6½ percent sales tax).

For further information or to order, contact DIJIT Systems, 4345 Hortensia St., San Diego, CA 92103 or (613) 278-3301, or call the Southern California Computer Group's SSCG-TIBBS at 300/1200 baud, (619) 278-8155.

Organizing your hard disk

By WALT HOWE

A single 20 megabyte hard disk can hold the equivalent of over 200 SSSD floppy disks. It puts an entire library of software in one place that can be accessed much faster than floppy disks and nearly as fast as from a RAMdisk.

The advantages of putting thousands of files in one instantly accessible place are obvious, but it takes some new techniques to manage such a large number of files. With the release of Myarc's Hard and Floppy Disk Controller, many 99/4A and 9640 owners will soon be transferring floppy disk files to hard disk. This article is intended to help you understand and organize your hard disks to make them as useful as possible.

Although your hard disk can hold thousands of files, it can hold a maximum of 127 files at its top level. Saving and using more files than that requires you to set up subdirectories, each of which can hold up to 127 files. Using subdirectories is something like using separate floppy disks,

except that the disks are always loaded, ready to use, and access is very fast.

The top level, also known as the "root directory," can hold up to 114 subdirectories in addition to its maximum of 127 files. Each subdirectory can in turn hold another 127 files and 114 subdirectories of its own.

You can set up as many levels of subdirectories within subdirectories as you wish, subject only to some practical limits as to how many characters it takes to address them. You could, for example set up a directory at the root (top) level titled WP (for Word Processing), put your word processing and related programs in that directory, and add subdirectories for text files. These could be titled, for example, BUSINESS, PERSONAL, and DOCS, and the subdirectory names would help you organize the text files you include in each. The directory structures you actually set up will depend on your own needs and interests.

Addressing a program or file in a sub-

directory is usually accomplished by stringing together WDS1, each directory or subdirectory name in between, and finishing with the filename itself. Each element is separated by a period, for example: WDS1.WP.BUSINESS.MYARCLTR.

The string of names up to but not including the filename itself is called the pathname of the file. If you want to call a file within a program, you address the file with its complete pathname. The total name can be up to 40 characters long.

Another way of using a pathname is to include the volume name of the hard drive instead of its number, just as you can do with floppy drives. WDS.HD1.WP.BUSINESS.MYARCLTR is an acceptable alternate way of addressing the file first named above, if the hard disk is name HD1.

Some programs that were not written with hard disks in mind will only allow 10 characters after the WDS1. You can usually continue to use those programs as long

(See Page 26)

ADVANCED VIDEO PROCESSOR CARD

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HARD DISK—

(Continued from Page 25)

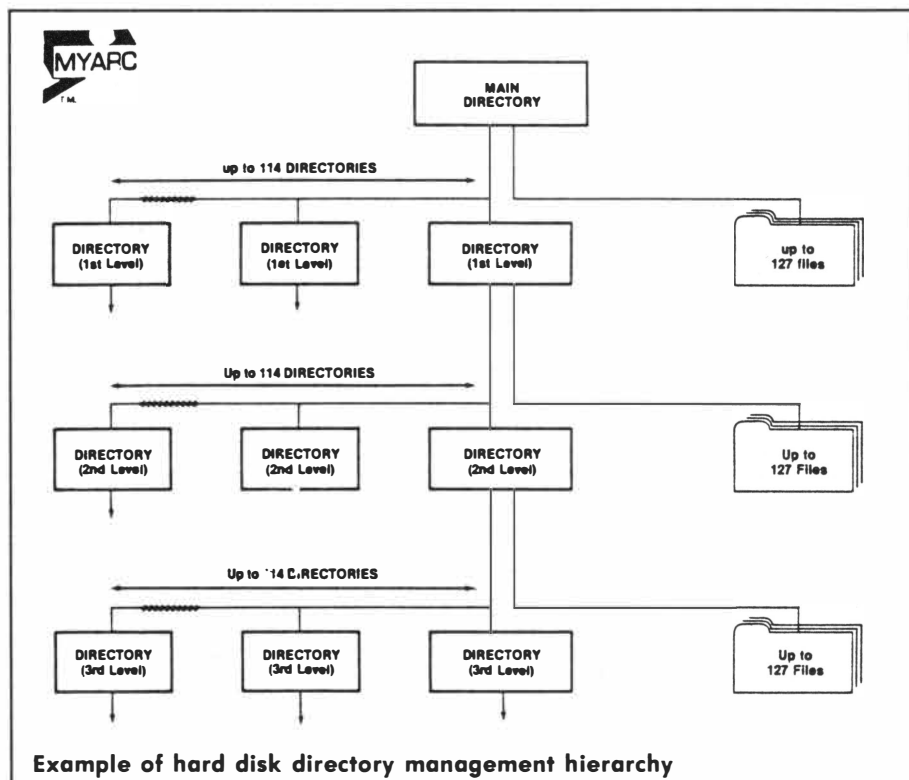
as you keep within the 10-characters. For this reason, it is a good idea to keep your directory and subdirectory names were written without hard disks in mind. Programs that look for data or program routines on disk while they are running will often only accept a DSK1 or other DSK# address. Others will only look for a disk with a particular volume name such as MULTIPLAN, which looks for additional routines on a disk with the name DSK.TIMP. MYARC has anticipated the problems that this can cause for hard disk users and has provided solutions to most applications. These take the form of DSK1 and DSK emulation in hard drive directories and a special type of file that is accessed as DSK1.

DSK1 DIRECTORY EMULATION

The HFDC includes built-in software that causes programs that seek DSK1 to look to the hard drive for a directory with the name DSK1 before it will look to the physical DSK1 drive. To take advantage of this, all you have to do is to create a directory with the name DSK1 at root directory level. You can then put all the files you want (within the 127 file limit) in this directory, and they will automatically be accessed whenever a program looks for DSK1. Just be careful you do not try to put several files with the same name within the directory such as LOAD or UTIL1. If the program you are using reads and writes to DSK1, it will read and write to the simulated DSK1, instead. If there is no DSK1 directory or the particular filename cannot be found in the DSK1 directory, the physical drive will be accessed next as usual.

DSK EMULATION

To handle files such as MULTIPLAN, which look for files on a disk with a particular volume name, create a directory at root level named DSK. Then create a subdirectory of DSK with the same name as the necessary volume name. Add all the necessary files to that subdirectory. For example, the MULTIPLAN program files should be in the subdirectory with the pathname DSK.TIMP. The HFDC will automatically direct all file accesses that look for DSK.TIMP.filename to the hard drive. If there is no directory name DSK or the filename cannot be found, the access will



next go to the physical floppy drive, as usual.

DSK1 FILE EMULATION

A third method of emulation has been included, which is a special kind of archived file that software will recognize as a physical floppy DSK1. You can have as many files of this type on the hard drive that you want, but only one can be active at a time. The files do not have to be at root directory level, but can be anywhere on the disk. The special file can have a

number of files archived and usable within it, such as all the program files from a particular floppy disk. Once the file has been created, it will appear in a disk catalog as an EMULATE file. More than one EMULATE file can be included in a catalog, but only one can be active at a time in the whole system.

The program and data files in an Active EMULATE file can be accessed just as if they were on physical floppy DSK1.

Make a stabilizer for your Widget

By JON HODGES

Dallas TI Home Computer Group

Two and a half years ago I bought a Navarone Widget cartridge expander for my TI so I could lessen wear and tear on the GROM port. A few months later I was so frustrated I almost put it away because of the lockups that occurred when the Widget was bumped. Instead, I designed a simple Widget stabilizer that all but eliminated lockups due to bumps. It work-

ed so well I made several to sell to others in the user group. Now, four production runs later, I decided to ask MICROpendium to publish the plans and instructions so I can retire from the manufacturing business.

In order to understand how it works, one needs to understand why the Widget failed. The sole mechanical support for the cartridge is the GROM port connector

(See Page 27)

WIDGET STABILIZER—

(Continued from Page 26)

itself. Moving the cartridge can cause the poor or broken connections that lead to lockups, but it is small (3x4 inches) and is well protected by the complementary well it sits in. The Widget is another story.

Being six inches deep, it is provided only one half the resistance to side-to-side movement the connector gives a cartridge. That might be bearable if the Widget weren't under foot, er, under hand all the time. Its extended profile puts it in the way, and with cartridges installed (that is why you bought it, isn't it?) it becomes hard not to hit.

Now, a little bump goes a long way. The solution is to hold the Widget at the bottom so it does not move. I have seen several approaches to this, from gluing it in place to using Vel-Cro fasteners. The problems with most home-brew fixes is that they look like home-brew fixes. Other problems included difficulty or inability to remove the Widget, and inviting more bumps by making it sit higher.

I chose to restrict its movement by adding four small, self-adhesive rubber bumpers around the Widget's foot. That way the Widget is removable, sits no higher than before, and the fix is not visible.

For the bumpers I cut in half self-stick rubber feet from Radio Shack (Cat. #64-2342), although anybody's will do as long as they are less than 1/2 inch wide and not too high.

Next I made a template to accurately place the feet, reproduced here as Fig. 1. I used periods, slashes and back slashes to define lines and surfaces. If you don't want to abuse your copy of MICROpendium by cutting out the template and don't have access to a photocopier, you can make your own. However, you must print it out at 10 characters per inch or it will be useless.

When it is printed, cut out the template using Fig. 2 as a guide. Cut the top first. Cut the sides next, just inside the outer dots on top. Cut the bottom next, and then cut the corner cut-outs last.

You will most likely cut into the arrows, but that is not a problem. With your rubber feet prepared, follow the directions on the template for proper alignment.

GENie reaches 100,000

GENie telecommunications services now has more than 100,000 subscribers, the company announced. The 100,000th subscriber signed up on March 16. GENie has become the fastest growing national telecommunications service since starting in 1985. The service includes an active Special Interest Group dedicated to the TI. For more information, call 1-800-638-9636.

```
. ooooo.oo0oooooooooooo0oooooooooooo0oooooooo.oo0ooo.
2
3      Use this format (Char, Line, Col)
4      to place the following characters
5      in the following positions:
6      (.,1,1)(.,1,7)(.,1,38)(.,1,44)
7      (/,20,7)(/,20,8)(\,20,37)(\,20,38)
8      (\,21,7)(\,21,8)(/,21,37)(/,21,38)
9      (\,22,11)(/,22,12)(\,22,33)(/,22,34)
10     (.,23,7)(\,23,11)(/,23,12)
11     (\,23,33)(/,23,34)(.,23,38)
12
13     This visual aid uses "o" as a
14     spacer, with "0" in every tenth
15     space. The resulting file must be
16     printed in 10 C.P.I.
17
18
19
20oooo//o0oooooooooooo0oooooooooooo0oooooooo\
21oooo\o0oooooooooooo0oooooooooooo0oooooooo//
22oooooooo0\oooooooo0oooooooooooo0oo\
23oooo.oo0\oooooooo0oooooooooooo0oo\ooo.
```

Fig. 1

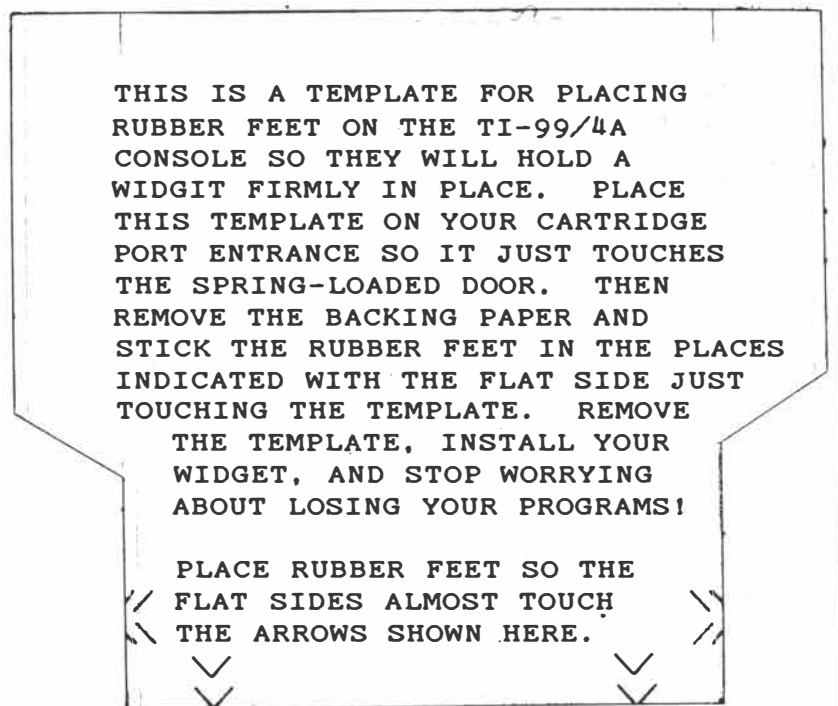


Fig. 2 This is the way my finished template looked.

Support our advertisers

Geneve

More questions and answers

By MIKE DODD

Here are some more questions and answers I've received about the Geneve.

One frequent question is "*why does the Disk Manager III program supplied with the Geneve lock up on my system?*" The DMIII program was written to run only on the Myarc Floppy Disk Controller Card. Attempting to run the program on a TI or CorComp disk controller will cause a lock up of the system. Myarc explained this in the addendum that was sent out with the Geneve disks, but many people evidently failed to notice it.

Another question is "*why won't the XOPs documented in Paul Charlton's XOP manual work from GPL mode?*" The XOPs were only meant to work from MDOS — it was never intended for them to work from GPL mode. The difference between MDOS mode and GPL mode is significant, and the XOPs could not have been implemented in GPL without causing some additional incompatibility with other 99/4A programs.

As almost everyone has noticed by now (and as Walt Howe pointed out last month), MDOS does not set the day of week correctly for dates after Feb. 29, 1988. To reset the day of week, use a CALL LOAD(-32738,x) where x is the day of week from 1 to 7 (1=Sunday, 2=Monday, on so on). However, it is not really necessary to make the change — MDOS does not store the day of week on disk with the time and date stamp. The only reason for changing it is so that MDOS displays the correct day on power-up. Note also that the bug with setting the day of week has been fixed in the next version of MDOS, which is undergoing testing right now.

A couple of months ago, I covered the memory management XOP calls of MDOS. Two other important calls are WriteTTY (in the Video library) and Parse Filename (in the Utility library). WriteTTY is very useful for outputting text to the screen. Parse Filename is used to convert a filename from the MDOS description to its physical description. For example, if the default drive was B and B was ASSIGNED to DSK4, Parse Filename would change the filename "HELLO" to DSK4.HELLO.

WriteTTY is in the video library (library number 6) under opcode >27. One important thing to remember is that this and all other calls in the video library require any parameters to be passed to it in execution page 7 (>E000—>FFFF). Remember also that >F080 - >F13F and >FFFA—>FFFF are reserved for MDOS and can not be changed. Thus, when we need to use WriteTTY, we need to move the string we wish displayed into execution page 7. Because of that, we need to first map a memory page into execution page 7.

You need to pass three registers to WriteTTY. R0 needs to be set to >27, the opcode for WriteTTY. R1 needs to be set to the starting address of the text we wish displayed. R2 can be either the length of the string or a 0. If R2 is set to 0, then MDOS will display all bytes in the text string until it reaches a null (hex >00).

For example, assuming we have already loaded a memory page into execution page 7, the following code will type "Hello World" on the screen:

SIX	DATA 6	number for vid. lib.
MSG	TEXT 'Hello World'	text
	BYTE >0D,>0A	CR/LF
	BYTE >00	null terminator
	LI R0,MSG	start of text
	LI R1,>E000	place to put text
MOVE	MOVE *R0+,*R1+	move byte
	JNE MOVE	if not null, continue
	LI R0,>27	WriteTTY
	LI R1,>E000	start of text
	CLR R2	null terminated
	XOP @SIX,0	write to screen

Notice the BYTE >0D,>0A. MDOS interprets the control codes in the ADM3A terminal protocol. >0D is a carriage return and returns the cursor to the beginning of the line. >0A is a line feed and advances the cursor one line. One other very useful control code is >1A, which will clear the screen. In a future article, I'll explain the rest of the control codes.

The Parse Filename operation is opcode 8 in the utility library (library number 9). You need to pass it four registers as follows:

R0 = >0008—the opcode for Parse Filename

R1 = pointer to the first character (not the length byte) of the filename to be parsed. It is assumed that the filename will be terminated with a null character.

R2 = pointer to the length byte of the buffer to store the physical filename. The length byte should be set to the maximum allowed value on entry to this call.

R3 = >0000 or >FFFF. If >0000, will parse as normal. If >FFFF, will eliminate the device name (e.g. DSK1.) from the output string.

Thus far, we have covered four XOP calls: allocate memory pages, load memory pages, write to screen, and parse filename. The following program uses all four of those as an example program. The program will accept an input and show you the parsed filename. For example, if the filename of the program is PARSE and your default drive is A, which has been ASSIGNED to DSK1., the command PARSE HELLO will display "DSK1.HELLO" on the screen. PARSE C:TEST/HI would display DSK3.TEST but not the HI. Remember that MDOS interprets slashes as command prefixes, not as part of the filename. The command PARSE C:TEST"/"HI or PARSE C:"TEST/Hi" would display DSK3.TEST/Hi.

To use the program, you will need a copy of Paul Charlton's fairware linker program. The program is available on CompuServe, GENie, and many other networks and public bulletin board systems.

Type in the program and assemble it with the C and R options. Go into MDOS, and load the linker program.

Type the filename of the object file to load that (e.g. PARSEO).

(See Page 29)

GENEVE—

(Continued from Page 28)

Type @ and the filename of your desired output file (e.g. @PARSE).

Type ! to return to MDOS.

Test the program by typing the output filename and a string. You can try many different combinations to see how MDOS parses it. You can even pass a null string (e.g. just type PARSE without a filename) and MDOS will parse it to the default device name. You can also try parsing the PRN device.

Also try modifying the parse program. Change the text and instructions. Experimentation is the best way to learn!

* Filename parse example.

* Copyright 1988 by Mike Dodd.

* For publication in MICROpendium magazine.

*

```
DXOP SYS,0
JMP START
```

*

```
VID DATA >0006      video library
MEM DATA >0007      memory library
UTIL DATA >0009     utility library
```

*

```
INBUF BSS 82          80 chars + 1 length + 1 null
OUTBUF BSS 82         80 chars + 1 length + 1 null
```

*

```
MYWS EQU >F000        main workspace
```

*

```
TXBUF EQU >E000       buffer to place text
```

*

```
FNMSG BYTE 31
TEXT 'The parsed file name is:'
BYTE >0D,>0A
TEXT '
```

*

```
ERRMSG BYTE 14
TEXT 'Fatal error.'
BYTE >0D,>0A
```

*

```
CRLF BYTE 2
BYTE >0D,>0A
```

*

```
D80 BYTE 80
```

*

```
EVEN
```

*

```
START LWPI MYWS
```

* load a page into >E000 area of RAM

* first, allocate a page into local page 1

```
LI R0,1      get page opcode
LI R1,1      get one page
LI R2,1      local page 1
CLR R3       slow ram is fine
SYS @MEM     execute xop
MOV R0,R0    error code
JNE ERROR    if any error, go to error routine
```

* now map local page 1 into execution page 7

```
LI R0,3      map page opcode
```

```
LI R1,1      local page 1
```

```
LI R2,7      execution page 7
```

```
SYS @MEM     execute xop
```

```
MOV R0,R0    error code
```

```
JNE ERROR    if any error, go to error routine
```

* get arguments passed to us on the command line

```
LI R1,INBUF  address of input buffer
```

```
MOVB @D80,*R1+ maximum length is 79 characters
```

```
BL @CMDSTR   get command arguments
```

```
JNE ERROR    if error, go to error routine
```

* got it - it will be null terminated in INBUF

```
LI R0,8      parse filename opcode
```

```
LI R1,INBUF+1 start of text (not length byte)
```

```
LI R2,OUTBUF output buffer
```

```
MOVB @D80,*R2 maximum length is 80
```

```
CLR R3
```

```
SYS @UTIL    call xop routine
```

```
MOV R1,R1    error code
```

```
JNE ERROR    if any error, go to error routine
```

```
BL @SHOTXT   display text
```

```
DATA FNMSG
```

```
BL @SHOTXT   display the filename
```

```
DATA OUTBUF
```

```
BL @SHOTXT   display a blank line
```

```
DATA CRLF
```

```
BLWP @>0000  return to mdos
```

* error routine

```
ERROR BL @SHOTXT display error message
```

```
DATA ERRMSG
```

```
BLWP @>0000  return to mdos
```

* display text on the screen

* call with: BL @SHOTXT

* DATA address of length byte

* moves text out to TXBUF, as all video routines require data passed

* to be in execution page 7.

```
SHOTXT MOV *R1+,R0 get address of length byte
```

```
MOVB *R0+,R2      get length byte
```

```
JEQ SHORRT        null length - don't display anything
```

```
SRL R2,8          to lsby
```

```
MOV R2,R3         save
```

```
LI R1,TXBUF       text buffer
```

```
SHOTX1 MOVB *R0+,*R1+ move
```

```
DEC R3            any more to move?
```

```
JNE SHOTX1        yes
```

```
LI R1,TXBUF       text buffer
```

```
LI R0,>27         write TTY opcode
```

```
SYS @VID          show on screen
```

```
SHORRT RT         return
```

*

```
*****
```

*

* convert command args into string

* by j. paul charlton

*

(See Page 30)

GENEVE—

(Continued from Page 29)

```

*      IN:  R1 points to string buffer (byte after length byte)
*           length byte must have max length of buffer
*
*      OUT: ok      R0=0 equal flag SET
*           error  R0=-1 equal flag RESET
*
CMDSTR MOV  @>0128,R2      get pointer to command string
JREQ NO$STR      zero length string
CB  @2(R2),@-1(R1)  compare lengths of strings
JRE BADLEN      string too long for the buffer
MOV  R1,R5      cursor to caller's string buffer
DEC  R5
MOVB @2(R2),R6      count of chars to move
SRL  R6,8
INCT R6
*
NXTNOD MOV  R2,R3      cursor within node
INCT R3
MOV  R2,R4
AI   R4,8      pointer to end of node
*
NODL1 MOVB *R3+,*R5+
DEC  R6
JREQ NODJ1
C    R3,R4
JL  NODL1
MOV  *R2,R2      this link never zero if valid
string
JMP  NXTNOD
*
NODJ1 CLR  R0
JMP  NODRET
*
NO$STR CLR  R0
MOVB R0,@-1(R1)
MOVB R0,*R1
JMP  NODRET
*
BADLEN SETO R0
NODRET MOV  R0,R0
RT
*
RND

```

Protecting the 9640 card

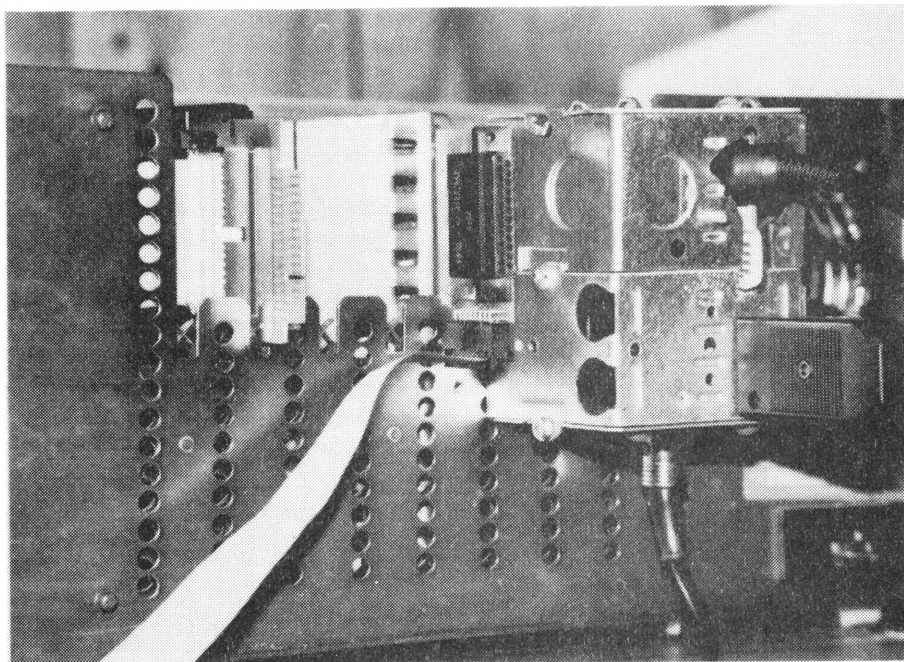
By THOMAS J. ARNOLD

From the first time I saw a photo of the Geneve card I was concerned that the card extended out from the back of the PEB. Although one does not often move the PEB, it does get exposed to potential knocks. Now that I have a Geneve this concern has become reality. As I take my system to every meeting of the Channel 99 Users Group (Hamilton, Ontario), I was initially removing the Geneve card from the PEB to avoid damage. This is unacceptable as I could damage the card or connectors by doing this on a frequent basis. I was more worried about static electricity more than physical damage.

My first idea to protect this card was to build a protective box from sheet metal. However, I was unable to find any sheet metal in my work shop on the day that I decided to commence this project.

Scouting around the piles of junk one collects in a basement workshop I came across an old electrical box that I had discarded. I tried to use this but it was too small to fit around the card. It was, however, just the right depth. This was important because I wanted to support the connectors on the back of the card.

I was about to look for something more suitable when I noticed that this type of



Two electrical boxes are used to provide protection to the back of the Geneve card. The author finds great utility in the modification to the PEB box insofar as he frequently takes his computer to user group meetings.

deep electrical box had it's sides screwed on. The reason for this is to allow more than one box to be joined together. Now I had the solution at hand. I located another box and removed one side from each box. When they were joined together they fit-

ted around the Geneve card perfectly.

I carefully drilled and cut holes to match the connections on the card. This is more difficult than it sounds due to cutouts, formed sections and pre-punched sections.

(See Page 31)

ENCLOSURE—

(Continued from Page 30)

The more equipped your workshop the easier this job will be.

Although my holes were not cut perfectly, they are placed so that they support the connectors, which is one the benefits of making this modification. The two boxes are connected to the PEB by three self-tapping screws placed through the small tabs which are used for connecting the electrical outlet or switch to the electrical box. Be careful to vacuum up the filings

created when you drill the holes in the PEB.

Locate the joined electrical boxes so that they clear the Geneve card by about 1/8 inch, you don't want to short out the card. I connected all the cables through the holes in the electrical boxes before I placed the boxes on the back of the PEB in order to mark the hole locations that needed drilling. This ensures that you get the location right. This location should allow you to place three cards in the space covered by

the extension. The RS232 card won't fit if you use the serial port (modem), but will if you just use the PIO port for a printer. You will have to cut a slot for the cable to pass through the electrical box.

Now when I haul the Geneve (it's no longer a TI is it?) to the monthly meetings I don't have to worry about hitting the card extension. In addition I don't have to worry about the kids pulling on the joysticks and breaking the Geneve card.

Reader to Reader

Reader to Reader is a column designed to put readers in touch with each other. Anyone with a specific problem or question that may be answered by other readers is encouraged to submit an item. Be sure to address it to Reader to Reader, c/o MICROpendium, P.O. Box 1343, Round Rock, TX 78680.

Richard Bressler, P.O. Box 3706, Merced, CA 95344-3706, wants to know if it is possible to control the cassette pause with CALL LOADs or VPOKE? He asks, "Can a peripheral device's presence be detected by CALL PEEK(V)?" e.g. disk

drive, cassette, printer, modem, etc.

He also asks whether it is possible to change the keyboard configuration to Dvorak or some other using the Triton Super Extended BASIC, the Editor/Assembler or both.

Claire Roberts, 2119 Pile, Clovis, NM 88101-3597, asks whether anyone in Lubbock, Texas, works on TI computer systems.

Ken Gladyszewski says, "I have always looked with envy at the interface Radio Shack had for just their computer. Now at last we have one. CorComp's module al-

lows someone with just a bare console to use this system. However, I am disappointed that their module has no provision for cassette or disk program event storage. X-10 includes information from which a BASIC program may be written using the RS-232 port. It is very involved and requires a good understanding of BASIC. I have succeeded in downloading commands but would like to communicate with others who are working on the same." Write him c/o the Northcoast 99ers, 6440 Painesville-Warren Rd., Concord Township, OH 44077.

The beginning of a MICROpendium index

Elton Schooling, of Sacramento, California, has created an index for MICROpendium. His index runs from the first issue through the end of 1987. He uses an Extended BASIC program and DATA statements to contain the index information.

His program outputs each year's index to a printer or to the screen. It is sorted alphabetically by subject.

Since the heart of the index is in the DATA statements, it is possible to use virtually any database program to do the same thing as his program by inputting the contents of the DATA statements into the database. An advantage of this is that a dedicated database program may be able to handle the index for more than one year of MICROpendium.

The index is lengthy and we will not be able to publish the contents of more than one year per issue. As a beginning, we'll start with the abbreviations, which were

entered originally as DATA statements. Next month we'll publish the index for

1984, with the indices for 1985 through 1987 to be published monthly thereafter.

Micropendium index — abbreviations

ADDR=ADDRESS	COL=COLUMN
ADVDIAG=ADVANCED DIAGNOSTICS	COMM=COMMAND
ALIGN=ALIGNMENT	COMP=COMPUTER
ART=ARTICLE	COMPAT=COMPATIBLE
BAS=BASIC	CONN=CONNECTOR
BATT=BATTERY	CONS=CONSOLE
BAWR=BA-WRITER	CONSWR=CONSOLE WRITE 2.1
BBS=BULLETIN BOARD SYSTEM	CONV=CONVERT
BEGIN=BEGINNING	COOL=COOLING
BIN=BINARY	COPYR=COPYRIGHT
BNCHM=BENCHMARK	CORR=CORRECTION
BUFF=BUFFER	CR=CARRIAGE RETURN
BUS=BUSINESS	CRYPT=CRYPTOGRAPHER
CAD=COMPUTER ASSISTED DESIGN	CTRL=CONTROL
CALC=CALCULATOR	DABASE=DATA BASE
CASS=CASSETTE	DEC=DECIMAL
CAT=CATALOG	DIAG=DIAGNOSIS
CC=CORCOMP	DIG=DIGITAL
CHAR=CHARACTER	DIM=DIMENSION
CHI=CHICAGO	DIR=DIRECTORY
CIRC=CIRCULAR CLN=CLEAN	DR=DRIVE
CLOAD=CALL LOAD	

(See Page 32)

INDEX-ABBREVIATIONS—

(Continued from Page 31)

DSIGN=DESIGNER
 DSK=DISK
 DSKDR=DISK DRIVE
 DUP=DUPLICATE
 DWN=DOWN
 ED=EDITOR
 ELECTR=ELECTRIC
 ENV=ENVIRONMENT
 ESC=ESCAPE
 EXT=EXTERNAL
 FEB=FEBRUARY
 FEEDB=FEEDBACK
 FNCTN=FUNCTION
 FNLWR=FUNLWRITER
 FOUND=FOUNDATION
 FREEW=FREEWARE
 GA=GAME
 GAZ=GAZELLE
 GEM=GEMINI
 GEN=GENERATOR
 GPL=GRAPHICS PROGRAMMING
 LANGUAGE
 GRAMCRACK=GRAMCRACKER
 GRAPH=GRAPHICS
 HANDIC=HANDICAPPED
 HD=HEAD
 HOR=HORIZON
 INFO=INFORMATION
 INIT=INITIALIZE
 INS=INSURANCE
 INV=INVERSE
 JOYST=JOYSTICK
 KEYB=KEYBOARD
 KILLERCAT=KILLER CATERPILLAR
 LANG=LANGUAGE

LDR=LOADER
 LI=LITHIUM
 LIT=LITERATURE
 LOC=LOCATION
 MAGN=MAGNIFY
 MAN=MANAGER
 MAX=MAXIMUM
 MECH=MECHATRONIC
 MEM=MEMORY
 MIN=MINIMUM
 ML=MACHINE LANGUAGE
 MMM=MINI MEMORY
 MOD=MODULATOR
 MON=MONITOR
 MULT=MULTIPLAN
 MULTI=MULTIPLE
 MUS=MUSIC
 NAV=NAVARONE
 NHANCE=ENHANCEMENT
 NUM=NUMBER
 ORD=ORDER
 PAP=PAPER
 PATT=PATTERN
 PAY=PAYMENT
 PERF=PERFORATED
 PERIPH=PERIPHERAL
 POW=POWER
 PRK=PERSONAL RECORD KEEPING
 PRNTR=PRINTER
 PROGR=PROGRAM
 PROOF=PROOFREADER
 PROT=PROTECT
 PROTEC=PROTECTION
 QSOL=QS SOLITAIRE
 REC=RECEIVABLE
 REG=REGULATOR
 REP=REPAIR

REP=REPORT
 REV=REVIEW
 ROUT=ROUTINE
 RTRV=RETRIEVE
 SBUG=SUPER BUGGER
 SCHEM=SCHEMATIC
 SCR=SCREEN
 SND=SOUND
 SP=SPACE
 STRUCT=STRUCTURED
 SUBR=SUBROUTINE
 SUPP=SUPPLY
 SYMB=SYMBOLIC
 TE=TERMINAL EMULATOR
 TIART=TI-ARTIST
 TIBBS=TI BULLETIN BOARD SYSTEM
 TKWR=TK-WRITER
 TRIPT=TRIPTECH
 TXT=TEXT
 UPD=UPDATE
 USGRP=USERS GROUP
 UTIL=UTILITIES
 VAR=VARIABLE
 WD=WORD
 WDPROC=WORD PROCESSOR
 WINCH=WINCHESTER
 WIPE=CALL CLEAR
 WIZDOMIN=WIZARD'S DOMINION
 WYC=WYCOVE
 XBAS=EXTENDED BASIC
 XFER=TRANSFER
 XFORM=TRANSFORMER
 XL=TRANSLATE
 XLIT=TRANSLITERATE
 XML=EXECUTION-MACHINE
 LANGUAGE
 XPAN=EXPANSION

Geneve miscellany

RAMdisk and the 9640, Logo II fix

This is from Ken Woodcock of Norfolk, Virginia. He writes:

It was frustrating to me to find that when I installed my 256K Horizon RAMdisk in my Geneve, it would only allow use of 720 sectors (180K). Not satisfied with that, I tinkered around and discovered that by modifying sector zero, all the memory is usable. This is how I did it:

1. Initialize the RAMdisk.
2. Boot up your sector editor. Edit sector 0 starting with byte 10 (>A) — remember to start counting with zero. Bytes 10 and 11 indicate the total sectors on the disk. Change it to 03E0 (992 decimal). Change the next byte from 09 to 10. Change bytes 18 and 19 to 0202 (indicates double-side/double-density). Now goto byte 56 (>38). You should find 03 there. If not, put it there. This is the start of the

sector bit-map. The 03 indicates that sector 0 and 1 are used. Put zeroes in all the following positions until you get to byte 180 (>64). Put F in all the remaining positions.

This assumes you are using the 8K ROS that was used with John Johnson's Menu program, version 6.3 or later. Otherwise, you will have to modify the bitmap and bytes 10 and 11 for 976 sectors.

The easy way to accomplish this is to copy sector zero of a HRD newly initialized on a TI system onto a disk, then copy that sector zero into the HRD in the Geneve system.

Logo II fix

Writes Dick Lauhead of St. Paul, Minnesota:

One cartridge that won't run on the 9640

is Logo II. The developers of Logo decided to enable interrupts with LIM1 >F instruction instead of the usual LIM1 2. This causes a blank screen. The fix is relatively simple but requires a sector editor. The only file affected is LOGO2.

Using a sector editor, locate the starting sector of LOGO2. Change the bytes listed from >0F to 02. Look for the pattern >0300 000F in all cases. The >F is to be changed to 2. Sector and byte numbers are in decimal because I use the Advanced Diagnostics sector editor. For example, if the first sector is 100, then N+17 is sector 117. Byte counts start with 0.

Sector	Byte	Sector	Byte
N+17	171	N+18	115
N+19	9	N+20	157
N+21	5	N+21	171

Super Space II

Bigger and better than the original

By KEN HAMAI

Having owned my Super Space II since early 1987, I guess it's about time I gave you a little review of what this cartridge is about. The cartridge is made by DataBioTics and has a suggested list price of \$89.95 but is heavily discounted by mail order and can be obtained from Tenex or Triton for about \$59.95 plus tax and shipping.

The big question is: What does it do? Well, if you've been following the latest trends in the TI-99 world, you have probably heard of the Super Cart. This was brought to you by the same people who invented the Horizon RAMdisk. Instructions for constructing your own Super Cart was presented in the June 1985 edition of MICROpendium.

Basically the Super Cart is a highly modified TI game cartridge that has an Editor/Assembler chip and an 8K Hitachi HM6264LP CMOS static RAM chip that is battery backed. An assembly language program could be loaded into the 8K RAM chip in the cartridge and once loaded, the battery circuit would keep the program in the RAM memory of the cartridge. In effect, the Super Cart allowed you to make your own cartridge.

Since the introduction of the cartridge, various assembly programmers have developed programs, primarily menus with built in loaders, that are used to load programs into the computer from disk or RAMdisk. Since the RAM chip is battery backed, when properly designed, the cartridge remembers what it was programmed to do even with the console turned off. This makes it convenient and quick to load assembly language programs from a utility disk. The cartridge made it easy.

The big problem with the Super Cart design is that the battery backup circuit could not be depended upon to keep the computer from wiping the memory on power-ups and power-downs. Additionally, battery life was short due to the low capacity battery used in the original design and the high current drain on the battery when the cartridge was left in the computer with the console power off.

The Super Cart also was limited to an

Report Card

Performance.....	A +
Documentation.....	B
Ease of use.....	B
Value.....	A +
Final Grade.....	A

Cost: 32K Super Space II list \$89.95

8K Super Space I list \$49.95

Manufacturer: DataBioTics Inc., 30904

Via Rivera, P.O. Box 1194, Palos

Verdes Estates, CA 90274, 213-925-2120

Requirements: console and disk system

8K memory space since no bank switching circuitry is provided. Some owners have installed up to 16K in a Super Cart but used bat switches to manually switch in each 8K bank. Program size was still limited to 8K maximum.

Imagine that instead of 8K RAM in a cartridge, you can have 32K! All of the memory is available with software bank switching, allowing a program of 32K to be stored in the cartridge. This is what the DataBioTics Super Space II is all about. It has a 32K chip instead of an 8K chip.

Because the TI computer does not have built in routines for bank switching memory in the GROM port, it cannot automatically do the bank switching but would need to be programmed to do so. To use all 32K in the Super Space II cartridge for one program, one would need to know how to write assembly language programs that included the bank switching routines. These routines along with those needed to make your own cartridge header have been provided by DataBioTics in the instruction manual.

Now for a little dreaming...

Look here, you have a console with a built in 32K expansion memory, now you have a 32K RAM cartridge. What do you do? Start with thinking about a word processor in the Super Space II cartridge. Then start thinking about using a couple of the 8K banks for a mini-RAMdisk. Hey, hey, hey, now you're thinking what I'm thinking!

More dreaming...

You're one of those rich guys who's go-

ing to be buried with your gecko skin boots on and your TI99/4A by your side. You think the BMW is for punks. You drive your customized cherry candy apple maroon, air-conditioned, sub woofer 350 watt CD stereo equipped, four wheel drive F-250, with tires that look like they came off a 747 and the 5 megawatt fog lights on the freeway because you like to look down on all those clowns in their foreign cars that have names that nobody can pronounce.

You have to have the best and latest TI 99/4A toys, better than any of your C-64 friends at the country club. And you don't even care that there's now a computer called the Geneve because it looks too much like an IBM. You just paid some guy \$\$\$\$ bucks to put the 32K into your gold anodized console because you needed to make room in your P-Box for your four new Grand RAM 512K RAMdisks. You gave away your three other RAMdisks for raffle prizes at the Bingo games at the church because they didn't have enough memory and, besides, the NICAD batteries were worn out.

You have the whole Four State Users Group libraries duplicated at least twice on your four 10 megabyte Myarc Winchester hard disk drives. You got so much hardware, the lights around your neighborhood dim every time you switch on your TI. When you turn it off, the power company calls to see if there's trouble on your line because they hate to lose a good customer.

Only problem, you have one heck of a time trying to figure out which program is where and what you have to do to load it in.

The 32K Super Space II is made for you! Use it to switch in up to 25 different menu screens. Use built in loaders to load up to eight menu selections per screen! Have instant access to over 190 different programs with a touch of a few keys! Getting tired of the old programs? Flip your Widget to the other two Super Space carts and boot in another 380+ programs! Get out the HAMAI'S hardWARE Hamcracker Widget Extender, hook up five Super Space II cartridges, get ready for over 950

(See Page 34)

SUPER SPACE II—

(Continued from Page 33)

programs. All selected by menu!

Earth to Hamai...Earth to Hamai...

When you buy the Super Space II, it comes with three floppy disks, containing several fairware programs and several utility programs and source code to enable you to use your cartridge as a menu loader. The fully documented source code for the menu loader programs is in the DataBioTics style, very heavily commented. If anything, a good lesson in assembly coding. Also included is a book on how to write TI BASIC programs (nothing to do with the Super Space II cartridge since it only uses assembly language) and a book on beginning assembly language (pretty good if you knew nothing about programming in assembly). You also get a well written manual on how to use Super Space II and what is inside the 32K cartridge.

In the design, DataBioTics uses a PAL (Programmed Analog Logic) chip which contains programming that allows you to bank switch in 8K chunks of memory at a time with an assembly language routine which is provided in the manual.

Now for the big question, do you like it, Hamai? Well, let me tell you, ever since I got it figured out, I haven't removed it from the GROM port! It did take me awhile to figure it out. When I got the cartridge, maybe I didn't read the fine print or something because I didn't know about the bank switch requirement. It took me a few frustrating hours over many days to figure out that the instruction manual was wrong about how to bank switch the cartridge and then wrote some bank switch programs which I can access on my RAM-disk and page in the 8K banks with different programs in each bank. After I had done that, I was informed by DataBioTics that there were indeed a couple of omissions in the instruction manual.

On page 8 of the manual, the test for memory retention tells you how to use CALL LOAD and CALL PEEK to store information in the cartridge and then how to check if it's still there. After you turn off the console and then turn it on again to go back to check the cartridge memory, you need to type in both the CALL PEEK and the PRINT statements again.

On page 13, the bank switch program

has one line missing. This line is: JEQ BANKA and should be inserted between lines SLA R0,1 and SLA R1,0.

The menu loader programs are really handy, I was loving it more and more until one day, four months after I first used the cartridge, the battery died.

Oh wow! I thought, it lost its mind! And I loaded it several times only to find out that every time I turned off the console, Super Space II would promptly forget what it had in memory.

Having built my own cartridges, I opened up Super Space II and found to my surprise and disappointment that the battery had gone dead. No big deal, I thought, must have been sitting on the shelf a long time. The manual says the battery should last one to two years. DataBioTics made the cartridge in 1986. Well, it had been at least a year since 1986 was over. So I changed the battery. The next one died even sooner. I called a couple of friends with the same cartridge. Same problem, dead batteries, more than once. Oops!

A quick call to DataBioTics. They know about the problem and are working on it (subsequently, they solved the battery problem with an upgrade). Now that I like! A company that listens to its customers!

Regarding the battery, I found the type that is used by DataBioTics was a little difficult to find even in Los Angeles. I therefore substituted the battery with a BR2032 which is claimed to have more capacity. The BR2032 is carried by any number of drug and department stores and Radio Shack. It is also the same battery that runs the CorComp Triple Tech clock.

Well, do you want to know if it's on my buy list? I would say definitely yes! With the upgrade to preserve battery life and corrections to the manual, I have to grudgingly admit that this is one of the slickest third party products of recent introduction. I have also seen and heard that there is more to come. John Johnson (Horizon ROS menu fame) has written a loader for the Super Space that looks and feels just like his famous Boot program for the Horizon RAMdisk. It is my understanding that DataBioTics is considering inclusion of the Johnson menu program with its source code in the software disks in the future.

Other fairware menu programs that run

in the Super Space is Megaload by Jim Derk, and Quick Load by another prolific assembly programmer, John Birdwell. Fairware utility programs include Edgar Dohman's Superbug II and John Birdwell's Disk Utilities.

In the commercial software arena, Genial Computerware, Box 183, Grafton, MA 01519, has released "Remind Me!" by John Johnson. This is a calendar program which can be used as an appointment calendar. The program includes a scratch pad and search functions. The daily activities for the month that are stored on the scratch pad can be printed out.

DataBioTics has released Edgar Dohman's "Super Forth." This program stores the Forth kernel in the Super Space cartridge and frees up an additional 8K of memory for Forth programming.

Although I bought the big 32K Super Space, if you don't need the 32K, the 8K Super Space is also a nice thing to have. It costs about \$25 less than the Super Space II but doesn't come with all the books and some of the software. You can use it as a menu loader, and it's fantastic for that! The "new" 8K model can be easily upgraded to 32K by pulling out the socketed 8K RAM chip, installing a 32K chip, and changing a few jumpers on the card.

In use, I have found that you have to observe the same precautions against static electricity and quick off/on power cycles as with the TI Mini-Memory. Static electricity and quick cycling of the power will wipe the RAM chip memory. This is well explained in the manual. It is a good idea anyway to always count about 10 seconds anytime you need to cycle the power on the computer. The surge is not good on the computer chips either. On my own console, I have installed a reset switch ala Widget so that I do not have to cycle power on program crashes. I recommend this for all TI users.

As I said, I leave the cartridge in my computer all the time and got rid of my Widget since most of the programs I currently use can run out of the cartridge. My CorComp RAMdisk is loaded up with utility programs which can all be accessed with the Super Space cartridge. Because of its more reliable battery backup circuitry, it retains memory better than the

(See Page 38)

PC-Transfer

A conversion utility with a future

By JOHN KOLOEN

PC-Transfer, written by MICROpendium columnist Mike Dodd, is the second program to come along that allows TI users to transfer text files between the TI and PCs. CorComp came out with TI/IBM Connection last year. TI/IBM Connection is a cartridge-based program that works only with the CorComp disk controller.

Unlike the CorComp cartridge, PC-Transfer works with the CorComp or Myarc disk controllers. A disk-based program, it is not protected, it loads from an E/A 5 type loader, including Funnelweb, or several versions of Extended BASIC, including TI, Mechatronics and Super Extended BASIC. It may be run from a TI with the CorComp or Myarc controller or from the Geneve with a Myarc controller. It won't work with a TI controller because the TI controller doesn't support double density.

Performance: Utilities such as this are generally straightforward in operation. Designed to serve a single purpose, they either work or they don't. PC-Transfer works fine. I found no problem in converting text files from TI to MS/PC-DOS format, and vice versa. I tried it using Myarc and CorComp disk controllers on a 4A and a Myarc controller on a Geneve and it performed the same on all three. It uses a 40-column screen in all three variations.

Data conversion is rapid. A file consisting of 40 sectors is converted in less than a minute. Operation of the program starts with designating one drive for the TI disk and another for the MS-DOS disk. To convert a file from one to the other, you run a catalog of the source disk. Then, with the cursor, you select the files to be converted and mark them with a "C." Having designated the files, you press "E" to execute.

However, unlike the TI/IBM Connection, there is another mandatory step before the conversion is completed. The file names selected for conversion now appear on the screen, one by one. You are required to enter a filename by which the file will be written to the target disk. At first, this may seem like an unnecessary procedure. But bear in mind that MS-DOS

DOS but couldn't be loaded into memory because the PC doesn't recognize a slash as part of a valid filename. TI/IBM Connection allows the user to change filenames prior to selecting them for conversion.

PC-Transfer works fine whether converting one or multiple files.

PC-Transfer is designed to work out of two floppies, but may be operated with one floppy and a RAMdisk. Of course, the floppy would be designated as the MS-DOS disk.

As with any conversion process, printer codes are difficult to translate. Carriage returns from a TI document won't be translated into the carriage return/linefeed combination used to mark the end of record for text files in MS-DOS. Embedded commands from PC word processors for boldface, italics, etc. won't be converted into TI executable format commands. Similarly, TI-Writer formatter commands won't be translated into PC-executable printer commands either. The manual suggests designating a character to be used in place of carriage returns in a TI document that can be globally replaced by carriage return/linefeed after conversion.

(See Page 38)

Review

Report Card

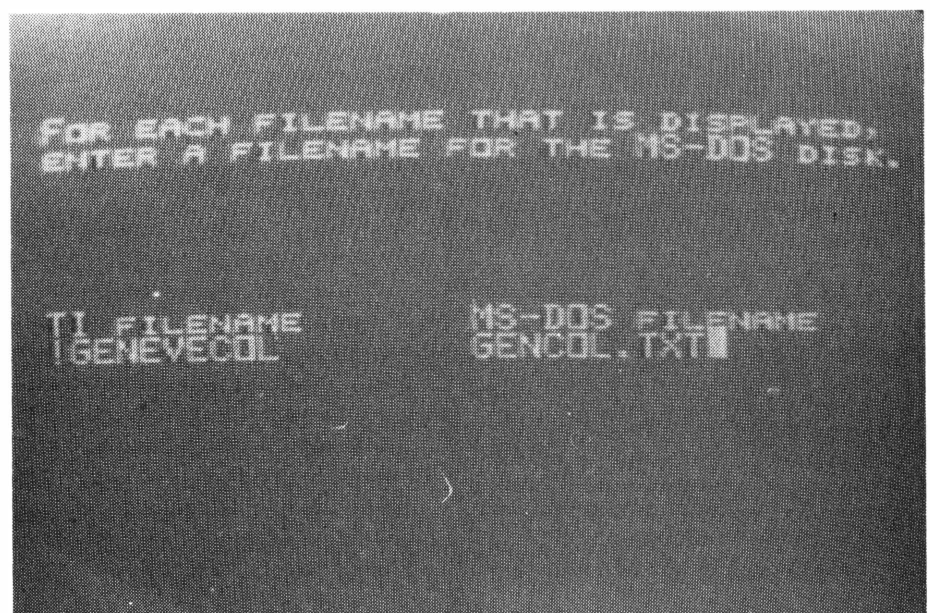
Performance.....	A
Ease of Use.....	A
Documentation.....	B
Value.....	A
Final Grade.....	A

Cost: \$25

**Manufacturer: Genial Computerware,
835 Green Valley Dr., Philadelphia, PA
19128**

**Requirements: disk system with two
floppy disk drives or one floppy drive
and a RAMdisk, expansion memory,
Extended BASIC or Editor/Assembler**

filenames may include a period while TI won't. And TI will accept slashes but MS-DOS won't. For example, if you were to convert a PC file called TEST.TXT to the TI, you wouldn't be able to load it into memory on the TI because the TI doesn't recognize a period as part of a valid filename. Similarly, a TI file named TEST/TXT could be converted to MS-



Calendar Maker

An artistic, up-to-date program

By HARRY BRASHEAR

One thing that all computers do, sooner or later, is the calculations necessary for the production of a calendar. The TI has not been left out of this basic ability and, over the years, we have had our share of calendar programs and generators. They've included everything from "teeny-tiny" wallet size, to 8½ x 11s, and in every printout style imaginable. The programmers have done their jobs very well but, to date, not one of them has treated the calendar as an art form. Yes, I said an "art form".

Take a look around your local book store in January if you question that term. There are shelves upon shelves of picture calendars covering every subject from sea slugs to nude studies. It's an "art form," designed to decorate the stark face of your refrigerator, cover the hole in the bathroom wall, or generally, prevent a 2000 year old device from becoming a boring experience. Like the bookstore calendar, the TI community will now have the ability to jazz up the mundane, common calendar.

I am speaking to you about Asgard Software's Calendar Maker, a creation, primarily, of Asgard's owner, Chris Bobbitt. An example of this program's potential can be seen here as the month of May. The original was a full-size computer page, that took about 10 minutes to print. Quite fast when you consider everything that goes into the make-up of the example.

There are a number of steps in making up such a printout, but it's not difficult. This is one of the most user-friendly programs I have ever seen. (I do not use such terms loosely.) In general, there are four steps in calendar creation:

1. Determine whether you want to do a year calendar or a month calendar.
2. Place the text and pictures on the calendar.
3. Set up the type styles, headline, and message.
4. Print out the calendar.

Building one of these calendars is like constructing a piece of fine architecture. I think that's what Asgard had in mind during the entire programming process because, looking back, it seems like I truly "constructed" the page you are look-

Review

Report Card

Performance.....A
Ease of Use.....A
Documentation.....B
Value.....A
Final Grade.....A-

Cost: \$19.95 plus 75 cents postage
Manufacturer: Asgard Software, P.O.
Box 10306, Rockville, MD 20850
Requirements: 32K, TI Extended BAS-
SIC, Epson or compatible printer and
disk system.

ing at.

There are a couple of things you should prepare before you get going on the calendar, though, so let's talk about them first.

The top area of the calendar is a Picasso Publisher picture. This program was selected because of the enormous working area allowed, something in the neighborhood of 480 by 360 pixels. This allows for a very quick, non-calculated picture, or, in other words, a ½-page dump. So if you intend to use pictures, you should be prepared with your favorite "Picasso prints."

The little pictures in the date squares are TI-Artist instances that I transferred over from CSGD graphics. This, of course, (See Page 39)



CALENDAR
MAKER
BY CHRIS BOBBITT
AND ED JOHNSON

TAKING
THE TI TO THE LIMIT

MAY 1988						
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2	3 SAM'S BIRTHDAY NEED GIFT	4	5	6	
	9	10	11 TI MEETING	12	13	
15	16	17	18 TI STAFF MEETING	19	20	
22	23	24	25	26		28
29	30	31 START VACATION MUST GET SHIP TICKETS TELL VIDS I WILL BE AWAY (HEEHEE)				

MADE BY HARRY T. BRASHEAR
2753 MAIN STREET
NEWFANE NY 14108

Archiver II Vn. 2.4

Putting the squeeze on your files

By BOB CARMANY

It seems like just yesterday that we could just admire the outstanding utility programs that were available for the (ugh!) IBM machines. Just think, a program that would archive several files together and squeeze them to save 40 percent of space on a disk.

Wouldn't it be wonderful if there were something like that for our "lowly" TI? Not only could we cram several of our program backups on a single disk, but imagine the savings (\$\$\$) when downloading programs from a long-distance BBS! Download and upload times would be cut in half and even a 300 baud modem would be practical.

Well, around Christmas, both Al Beard and Barry Boone released versions of a "squeezing" archiver for the TI. This review is about the complete version of Barry's Archiver II — Vn. 2.4!

Performance: When the program boots (there is an XB loader called ARCHIVER), you are presented with a menu of six choices: 1) Pack Files, 2) Unpack Files, 3) Compress, 4) Uncompress, 5) Utility Menu and 6) Reload FW 4.0.

The PACK → UNPACK and COMPRESS → UNCOMPRESS functions now have a decent sized buffer and they no longer "beat your drives to death" when using any of the functions. Both processes are faster than in the Vn 2.3 release. I didn't encounter a single problem while using any of the first four menu choices.

Choosing the UTILITY MENU presents a sub-menu of utilities to manage your files and move them from disk to disk without ever leaving the Archiver II environment. In order, they are 1) Catalog Disk, 2) Catalog ARC-File, 3) Delete File, 4) Protect File, 5) Unprotect File, 6) Rename File and 7) Copy File. Using these utilities is easy and straightforward. They give you the flexibility to manipulate the source files and output files in a multitude of ways. A VERY welcome addition to the program.

The final menu option is to Reload Funnelweb Vn 4.0. Barry took a different approach with Vn 2.4 than he did in the earlier "rush" release. It now asks for a disk drive number for the UTIL1 file and reloads Funnelweb from disk. Whether it is

Review

Report Card

Performance	A+
Ease of Use	A+
Documentation	B+
Value	A+
Final Grade	A+

Cost: Fairware contribution

Manufacturer: Barry Boone, Box 1233, Sand Springs, OK 74063.

Requirements: Console, monitor or TV, disk system, 32K memory expansion and Extended BASIC.

"cause" or "effect" I'm not sure, but the result is that the buffer space in the Archiver II program has been drastically increased and Funnelweb now loads flawlessly! An "A+" is the highest grade that I could give its performance and it is well-deserved! It looks like a "zero bug" report!

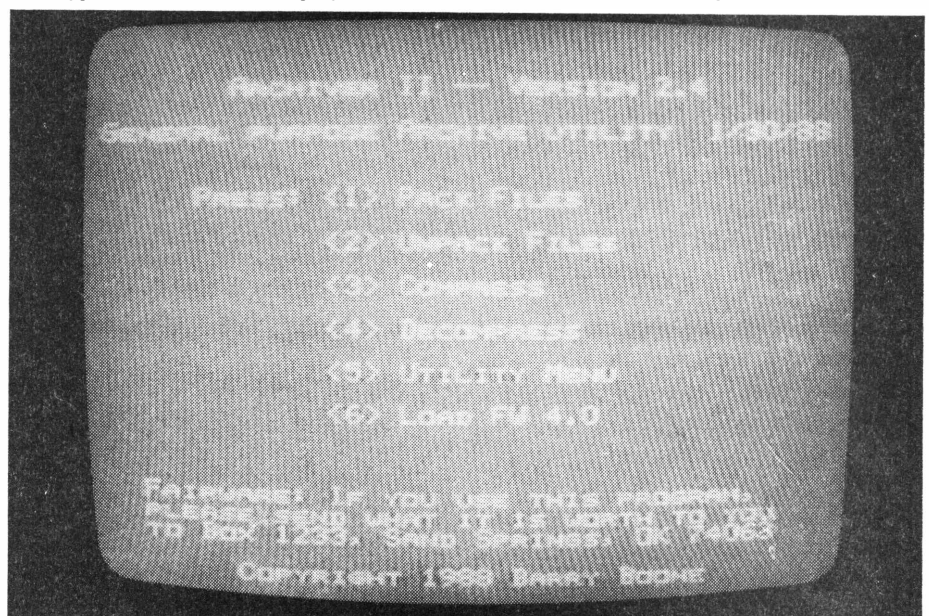
Ease of Use: The program is a delight to use! Everything is menu-driven and the prompts are clear and easy to follow. Each of the menu options even has an on-screen reminder as to which option you are using. The "Catalog ARC-file" option in the UTILITY MENU will now catalog both packed and packed/squeezed archive files. The type of file is even displayed on the

screen for you! All you have to do after choosing any of the menu options (or the sub-menu options) is to "fill in the blanks" and let the program do the rest. It is one of the easiest programs to use for the complexity of function that I have seen recently.

Documentation: Now for the only "non-A+" of the lot! There is a two-page documentation file with the program. The brief documentation is actually quite good despite its brevity. There is a short discussion of how to identify archived files and archived/squeezed files and how to process them. This portion of the documentation was succinct and to the point and quite clear. There is a paragraph or so about how to modify the default in the program. This is the only real shortcoming I could find in the document file — it was a bit too brief for the novice. The instructions for making the changes were clear enough, but the actual byte locations could have been given to make everything just a bit better. Experienced "disk hackers" shouldn't have any trouble making the alterations, though. Expanding the documentation a bit — maybe another page — would take care of everything.

Value: The program is "fairware" so you pay whatever you like. Is the program a bargain? You had better believe it! It is worth whatever you care to contribute. One of those rarities (like Funnelweb and John

(See Page 39)



SUPER SPACE II

(Continued from Page 34)

majority of the homemade Super Cart designs.

I would say that the cartridge is almost a must have item if you want fast and easy program loading. If you have a RAMdisk, the cartridge is an asset. The Super Space menu program by Johnson is easy to change from the keyboard and is on instantly, just like any other cartridge.

For hardware hackers, the circuit card of the Super Space cartridges can handle both RAMs and EPROMs. Instructions are provided in the manual on using RAMs from 8K to 32K and EPROMs from 8K to 64K. Of course, with the EPROMs one

would not need the battery which can be removed easily from its holder. Rumor has it that Edgar Dohman, the developer and programmer of Super Space II, Super Bug II, and Super Forth, has developed a 64K RAM cartridge modification for Super Space II which requires piggy backing another 32K RAM chip and wiring in one other chip to provide the bank switching between the two 32K RAM chips.

For software hackers, a program called CVAC (Cartridge VACuum) is provided which allows you to down load 8K RAM/ROM cartridges to disk and load them back into Super Space RAM. This only works with RAM/ROM only cartridges. Almost all TI cartridges have some GROM and cannot be downloaded with CVAC for use in the Super Space cartridges.

A couple of final notes: the Super Space cartridges cannot be used in the V2.2 TI consoles due to the GROM protection built into the console. Most TI users are aware of this problem. If you only have the V2.2, I suggest you keep it as a spare and get one of the old ones. TI quit making the 2.2 after droves of new purchasers returned them to department stores in 1983.

If you intend to fully utilize the cartridge, it helps if you know some assembly language. Let me tell you, for me, learning assembly is like pulling teeth, I only do it because I have to. We're very fortunate to have very capable assembly programmers who write really good stuff for this cartridge. If you happen to use one of their programs and like it, let them know you like it!

Overall, I give this product an "A" rating. Those of you who currently have the Super Space or Super Space II, I suggest you contact DataBioTics for the battery upgrade modifications. The Super Space II bank switch program modifications (corrections to the manual) and the source code for a bank loader program that loads all four banks of the 32K cartridge have been released for Super Space owners and can be found on the 99BBS (213) 943-1194.

formatter commands, you'll just have to reconstruct them on the target machine.

Just in case anyone misunderstands what the function of PC-Transfer is, it is to convert ASCII files from TI and MS-DOS machines. It does not do spreadsheet files, nor programs, nor any non-ASCII file. You'll want to make sure that the PC word processor you use will save a file in ASCII format prior to converting it for use on the TI.

In addition to converting text files, PC-Transfer is also capable of formatting PC disks in any of four formats.

Ease of Use: Most users won't even need to skim the manual to use this program. Everything is prompted and the only confusing part to me was deciding why it is necessary to rename the target files.

Documentation: The manual is a 5-page booklet that outlines the operation of the program and provides a few suggestions on handling printer codes and the like. I would have liked to have seen more in this regard.

Value: Although PC-Transfer earns its grades on the basis of its performance, there's the promise of more to come. After booting the program, there is an option to load conversion tables. At this point, only one such table exists and it is the default table that does ASCII conversions. But there is the possibility of creating other tables for conversion of other types of files (spreadsheets, databases, etc.) between the TI and PCs. This is an exciting prospect, if the capability is developed. I only wish that additional information about this capability would have been included in the manual so that users could start experimenting.

Even so, or perhaps because of its promise, PC-Transfer is a fine utility for anyone who needs to transfer documents between PCs and the TI or Geneve. For those with Myarc disk controllers, it's the only choice while those with CorComp controllers now have a choice between two fine conversion utilities.

Coming Soon!

A comparison of the national telecommunications services as they relate to the TI community

HARDWARE MANUAL FOR THE TI 99 / 4A

IT DESCRIBES:

- CONSOLE DESIGN
- CUSTOM CHIP OPERATION
- TMS 9900 H/W ORGANIZATION
- TMS 9900 INSTRUCTION SET
- INTERFACING PITFALLS
- CONSOLE SCHEMATICS
- PEB CARD DESCRIPTION
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PC-TRANSFER—

(Continued from Page 35)

sion to MS-DOS. As for other printer and

CALENDAR MAKER—

(Continued from Page 36)

must be done outside of the CM environment, but there is one other step in this process that CM does take care of. If you will take notice of the second and third Saturdays, you will see that the bottle and glass, (my pictorial selection for party time) is compressed the first time.

This is because the calendar is printed in compressed, or double-density, graphics mode. Hence, the instances are badly distorted if used as is. CM has a converter built into the program that not only changes the suffix from “_I” to “:P” but also doubles the width of the instance so that it appears normal, while in fact, it is really compressed. You are given the option of doing this so I left the first bottle as it was to show you the difference.

Once you have your pictures and instances ready on a work disk, you go into CM and first tell it whether you want a year calendar or a month. The year calendar is not intended to have pictures at the top, or message lines, so instead it will print out two months on each page. It would also be appropriate to tell you that you are allowed to print up to 40 text blocks and pictures on a single month, but only 40 for an entire year calendar. If you have a big family and a lot of birthdays to remember, I would suggest you do a whole year, one month at a time. In the Create Calendar section, you make the aforementioned decisions and let the program know what month and year you want. Since the program allows any year from 1600 to 2400, Asgard suggests that this may be a good program for history teachers. (Nice idea!) When you're finished, you are automatically sent to the next step.

I said this program was user friendly and the design area is the first place this becomes truly evident. The month you have selected takes up the better part of the screen, and a giant hollow cursor is used to run around and get the days you want to say something about. You have full use of the arrow keys to do this. When you get to the day you want, press enter and you are asked if you want to place a picture, text or delete something there. If you want a picture, a window opens up on the right with all of the picture file names it found on your work disk. You just go down the list with the arrow keys and hit enter at the

file you want. What could be easier!

If you want text instead of a picture, you get another window with full edit ability. Take a look at the 31st and you will see how much info you can put in. I found what I would consider a bug here, though. If you write in the first two spaces of the first and second lines, you will lose it in the printout. Once you find this out you can just avoid the spaces. I would rather you weren't allowed to use them to start with. The month is saved when you're finished and you are sent to the layout section of the program.

In the layout, you select the type of border you want around the dates, the fonts you want to use for the text, and year/month titles. There are a few of each of these on the disk to choose from, but later on, a utility disk is supposed to be available so that you can make up your own. I will be looking forward to that.

Finally, you get to print out all of your hard work. If you are printing out a month

calendar as I was, you have the option of printing a three line message at the bottom. This could easily be a business name and address or anything else you like. If you elect not to print a picture on a month calendar you can make this a 13-line message. I might also point out that without the picture the calendar is centered on the page.

In summation, this is one heck of a program. I haven't seen a calendar program like it for any computer.

There are a couple of things I would like to see changed, primarily the saved files. They are all default names and you lose all of your hard work if you use the same disk for each month. Also, while the program is very well thought out and friendly, the docs were not up to Asgard par. Since Asgard is very reliable in upgrading where and when they should, I suspect these problems will all be ironed out by the time you read this review.

ARCHIVER II—

(Continued from Page 37)

Birdwell's Disk Utilities) that are bargains at virtually any price. Besides, at 1200 baud, you will probably save enough on your first download/upload on a long distance BBS to justify whatever you sent Barry.

Final Grade: What can I say? It will save you money when accessing bulletin boards and disk space for saving those back-up programs. It will even make exchanging programs with someone halfway around the world more economical by reducing the number of disks you need to send. It is “Funnelweb aware,” making Archiver II a valuable addition to that system “shell.” No final grade other than A+ is justified.

Postscript: I have “hacked around” with Archiver II for a little while now and the Lempel-Zev algorithm that Barry used for squeezing files is a real eye-opener! Most of the text files I have used on it are reduced somewhere around 35-40 percent on the average. Of course, there is some variation depending on the structure of the file that you are processing. What does all this mean? Well, in one instance, a single

group of files was reduced from 229 disk sectors to 65 sectors! Four “flippies” produced 12 SSSd disks of material when they were unpacked and unsqueezed! Imagine the savings in time when you download a packed and squeezed file from a BBS!

Besides all of this, Archiver II will load quite easily from either the GPL environment in Funnelweb or one of the “stand-alone” GPL loaders available.

One of the most exciting things is that for the first time, the TI world is bringing together some of its most talented programmers to create an integrated software system. Just as Funnelweb seems to have become the standard for a broad-based overall software shell, Archiver II (and yet-to-be-released Archiver III) is destined to become the standard for TI archivers. It is truly great to see Tony McGovern and Barry Boone writing programs that will interface with each other as easily as these two do!

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Newsbytes

Multi User Group Conference set

The Lima Ohio User Group is organizing a Multi User Group Conference and Swap Meet from 8 p.m. to 6 p.m. May 21 at the Lima campus of Ohio State University.

The event will be held in the campus cafeteria dining area and an adjoining conference room.

As the university is not charging any fee to the users group, there will be no admission charge to individuals who attend and no exhibition charge for user groups or dealers who wish to set up displays or give demonstrations.

Events scheduled for the conference include a demonstration of the Geneve; Jim Peterson selling Tigercub software and demonstrating his Nuts & Bolts; Bud Mills Services selling Horizon RAMdisk kits and 32K in the console kits; and Irwin Holt, president of C.O.N.N.I., the Columbus, Ohio, users group, demonstrating how a blind person uses the 99/4A.

For further information, registration or requests for update mailings about this event, contact Dave Szippel, president, Lima Area TI99/4A User Group, 4 Poulston Place, Lima OH 45805 or (419) 228-7109.

Beyond Video Chess released by Asgard

Asgard Software has released Beyond Video Chess by Harry Wilhelm.

Beyond Video Chess is described as an enhancement to the Video Chess module. It allows the user to save or load a game to disk, use the joystick to move the pieces, get a screen-dump of the game at any time and list the moves to the printer.

Beyond Video Chess, written in assembly language, requires 32K, a disk drive and one of the following hardware configurations: a Navarone Widget and Editor/Assembler, a Horizon RAMdisk, a Myarc or CorComp disk controller or a Load/Interrupt switch (from CorComp or various others) and the E/A module. An Epson or compatible printer and a joystick are recommended. The program sells for \$9.95 plus 75 cents shipping and handling.

For further information, or to order, write Asgard Software, P.O. Box 10306, Rockville, MD 20850.

Texas TI Faire set

The Texas TI Faire, sponsored by the Forest Lane Users Group of Dallas, Texas, in association with the Paris TI Users Group, the Brazos Valley TI Users Group and the North East Tarrant County 99/4A Users group, is scheduled for April 30 at the Holiday Inn in Richardson, Texas.

Presentations scheduled are "Myarc 9640 and Other New Products," by Jack Riley, vice president of Myarc; "Using Funnelweb 4.0 to Its Fullest Potential," by Marty McCain of FLUG; "Disk Management Systems," by Richard Fleetwood of FLUG; "TI RAMdisks and Usage," by John Creviston of the Dallas TI Home Computer Group; "Programming in TI BASIC," by Jerry Keisler of the Paris TI Users Group; "TI Hardware Projects," by James Crossen of the NET 99ers; "The FORTI Music Card," by Sam Weller of FLUG; "TI Telecommunications Seminar," featuring Scott Darling (sysop of the GENIE TI Roundtable), Jeff Guide (system manager of TI-NET on Delphi) and Jim Horn (sysop of the TI Forum on CompuServe).

Vendors scheduled to attend include Texas Instruments, Myarc, Rave 99, T.A.P.E. (Mechatronics), Miller Communications, Texaments, Asgard Software, Disk Only Software, Jim Leshner, Startext, and Armadillo Bytes.

For further information, contact FLUG, P.O. Box 743005, Dallas, TX 75347-3005 or call Roy Willis, (214) 231-2168, Richard Fleetwood, (214) 328-9257, or the FLUG TIBBS (214) 328-4880.

New database scheduled for release

FirstBase, developed by Olympys Technologies, is scheduled for release in the second quarter of 1988.

According to the manufacturer, the program will feature IBM style query commands, batch processing with four-function floating point math, multiple keyword searches, "extremely large" capacity and "handy macros.

The batch processing allows the user to perform search and replace functions or to delete a group of records at once, according to the manufacturer.

The specifications include 720 bytes/fields, 32,767 records/databases, 3,000 bytes/record, 100 megabytes/file and 75 fields/records.

The program allows for search on multiple fields using AND and OR, or on keywords; sort on multiple keys; queries sent to screen, printer, new database or existing database; and records on several screen displays. It features a flexible report generator, according to the manufacturer.

FirstBase requires 32K and disk and either the Extended BASIC, Editor/Assembler or TI-Writer cartridge. It is Myarc Geneve 9640 compatible.

Suggested retail price is \$49.95. Exclusive distributor is Genial Computerware, P.O. Box 183, Grafton, MA 01519.

Keyboard strips available from group

The Southwest Ninety-Niners are distributing vinyl keyboard strips for the TI99/4A which describe the function and control keys in BASIC, TI-Writer, Multiplan, Editor/Assembler and TE-II.

The strips are \$3 each or five for \$10 from the Southwest Ninety-Niners, P.O. Box 17831, Tuscon, AZ 85730.

Memphis fair set

The Memphis Area Computer Council, a consortium of different brand user groups in the Memphis, Tennessee, area, will be conducting a user group fair from 10 a.m. to 5 p.m. June 4 at State Technical Institute in Memphis.

Groups participating include the Mid-South TI99/4A User Group, IBM and compatibles, Commodore, Amiga, Atari, Color, Osborn, CP/M and Coleco Adam.

Vendors cannot sell items on the campus, but user groups may demonstrate items and pass out information, according to Gary Cox of the Mid-South 99ers.

Admission is free. Any vendors wanting materials distributed may call or write Cox, c/o Mid-South User Group, P.O. Box 38522, Germantown, TN 38183-0522 or (901) 358-0667.

User Notes

CALL QUIT from BASIC

This is from Floyd Donaldson, of Buckingham, Quebec. He writes:

It's been frequently reported that CALL LOAD(-31806,16) will deactivate the QUIT function in Extended BASIC. What has not been reported, however, is that this also holds true for TI BASIC, when the Mini-Memory is in place. This means that owners of a TI99/4A with a Mini-Memory Module can also enjoy typing on the TI without having to worry about accidentally pressing FCTN QUIT.

A bit more on Print-A-Tag

Frank Geitzler, of Dartmouth, Nova Scotia, writes:

Ed Machonis wrote an interesting article in your December 1987 issue, with his 'Print-A-Tag' program. The humor was refreshing, and the program itself is useful. One trivial bug crept into line 350 of the program, however — the line should read: 350 N\$=CHR\$(27)&"W"&CHR\$(1)&RR&CHR\$(27)&"W"&CHR\$(0)

The letter "W" should be followed by CHR\$(1) or CHR\$(0) rather than "W1" or "W0" as printed. This is true for my printer, a Riteman II, but I believe this is the proper Epson code.

On several occasions I have loaded the program and waited for a display, only to realize after a minute that my printer was not ready. I therefore added to the beginning of line 160 a prompt to cover that situation:

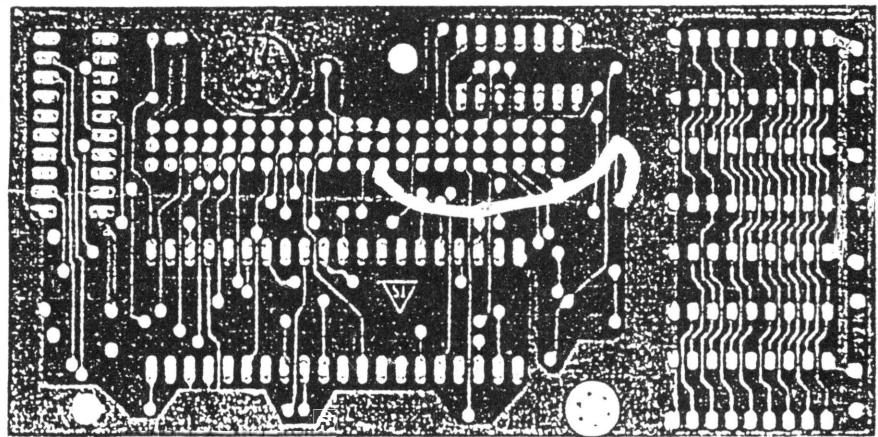
```
160 DISPLAY AT(1,1)ERASE ALL
BEEP:"PRINTER READY? Y" :: AC
CEPT AT(1,16)SIZE(-1)VALIDATE("
Y"):K$ :: OPEN #1:"PIO",OUTPUT
```

CorComp solves standalone problem

This comes from Enrico Gasperini, of Towaco, New Jersey. He writes:

I am using a CorComp standalone Memory Expansion model No. 32K-SAU. What was happening with my system was that every time I used DM1000 or Editor/Assembler, and the program would

New "DBIN" into RAM



32K-SAU board (CorComp)

have to print sector numbers or line numbers as in E/A, the results would be ASCII code instead of numbers. This would occur on the screen and in the printout. For example, the results would look like this in a catalog printout from DM1000:

```
TK-WRITER Free 18n Used 174
GAME Free 1zh Used 1 m
```

Pretty strange, right!

I wrote to CorComp and they came through with the solution. It is quite simple. There is a jumper wire on the board that must be moved to another spot. I simply unsoldered one end of this wire and soldered it to the new position (see example).

Routine creates geometric shapes

Bill Harms, of Chino, California, writes:

Regena's articles and programs using trigonometry prompt me to describe a short but powerful routine that creates geometric shapes.

The graphics power of TI can be harnessed with the Super Extended BASIC cartridge developed by MG. With its built-in, instant access Draw 'N Plot routines and the 32K memory expansion we can easily do sophisticated line drawings of circles, fans, hexagons and other equal-sided figures and stars.

Super Extended BASIC adds commands such as CALL LINK("DRAW",X,Y) that will turn on the almost 50,000 pixels in our

256x192 computer screen. Used in FOR/NEXT loops, you can really make them shape up.

Also possible are ovals, which are needed if you want a true circle on an expanded screen dump where the height needs to be calculated at 85 percent of the width. The CALL LINK("CIRCLE",X,Y,R) command does fine for the normal 4x2 screen dump and the screen display, but not when the screen dump is expanded to its 7x6 size.

The following routine gets the user's desired center point X and Y value (dots on the 256x192 grid). Then it asks for the outer radius of the star. When the inner radius is close to the outer radius you'll get a shape that looks like a gear. If the inner radius is close to 1, you'll get a shape that looks like a fan of 360 degrees.

Then the program asks for the number of points desired. Around 6-10 points looks nice, but when you use only 2, or say 80 points, and change the ratio of inner to outer radius, some surprising results occur. Lastly, the routine asks for an "ovalizer factor." This changes the ratio of height to width so the shape will appear squashed or circular or tall and thin.

To add spice to the routine, you could make the FOR/NEXT loop start at a chosen degree point and end at a chosen point. Why be limited to just a full 360 degree shape? Just convert the degrees to radians like so: RAD=DEG*P*/180. There are several other ways to enhance the routine and many don't take much time

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User Notes

(Continued from Page 41)

to do.

I thank Steve Davis Publishing, John Clulow and Bernie Elsner for the basic idea on how to use SIN and COS. By the way, I found that the word degree comes from the Latin word "gradus" meaning a gradation unit of measure, and the word "sine" is from the Latin "sinus" or a bend or curve. That is because it represents the portion of a circle that extends beyond a straight line drawn from two points on a circle's circumference.

```

40 ! REQUIRES MG SUITER EXTEN
DED BASIC !105
50 ! STARMAKER. NOV. 1987 !1
81
60 CALL INIT :: CALL DRAWNEL
OT !012
70 CALL LINK("CLEAR")!127
100 INPUT "X point for Cente
r ":CX !102
110 INPUT "Y point for Cente
r ":CY !104
120 INPUT "Radius units ":R
! try 50 !207
130 INPUT "Inner Radius unit
s ":I !097
140 INPUT "No. Points for St
ar ":S !052
150 INPUT "Ovalizer ":O !210
160 !!131
200 RAD=0 !142
205 SS=2/S*PI ! to convert p
oints to parts of a circle,
in radians !244
207 SS=SS/2 ! cut it in half
for the angle needed for in
ner radius points !227
210 ! next we move to a poin
t on the outer radius. !134
220 CALL LINK("MOVE",CX+R*(CO
S(RAD),CY-R*(O*SIN(RAD)))!137
230 !!131
231 B=0 !249
240 FOR RAD=0 TO 2*PI STEP S
S !190
241 B=B+1 !253
242 IF B/2=INT(B/2)THEN 243
ELSE 244 !042
243 K=I :: GOTO 250 !029
244 K=R !091
250 X=CX+K*COS(RAD)!145
260 Y=CY-K*(O*SIN(RAD)!171
270 CALL LINK("DRAW",X,Y)!02
0

```

```

280 NEXT RAD !109
290 !!131
300 CALL LINK("SHOW"):: END
!029

```

Guess where line 220 puts you on the circumference? How about a Star of Stars?

Help for Seikosha screen dump

This comes from James Wiegand of Ridgeley, West Virginia. He writes:

Apparently, there are many versions of the Axiom GP-100TI printer on the market. I checked the identification tag on the back of my printer and found that it is really a Seikosha GP-250X. This printer was purchased with the Axiom Parallax TI interface.

One great concern is the lack of a screen dump program for this printer. Extended Software Co. (11987 Cedar creek Dr., Cincinnati, OH 45240, 513-825-6645) has an XBASIC program that will, with some modification, make a screen dump. The cassette version is rather slow.

Making the following line changes and then following their instructions will provide a good screen dump. Also, REM out or delete line 230.

```

200 OPEN #2:"PIO.CR",OUTPUT
220 PRINT #2:CHR$(27);CHR$(76);CH
R$(2); !SET DISTANCE BETWEEN
LINES
250 PRINT #2:CHR$(13);CHR$(10);RP
T$(" ",24);CHR$(27);CHR$(71);CHR$
(1);CHR$(256);
310 G=7 :: FOR A=15 TO 1 STEP -2
:: B(0,G)=POS(H$,SEG$(A$,A,1),1) :
: B(1,G)=POS(H$,SEG$(A$,A+1,1),1)
:: G=G-1 :: NEXT A
350 NEXT C :: NEXT R :: PRINT #2:
CHR$(10);CHR$(13);CHR$(27);"L";"
3" :: CLOSE #2 :: CLOSE #1 :: CALL
SOUND(1000,523,0) :: PRINT "FINIS
HED"

```

TI-Writer text sorter

The following Extended BASIC program is designed to sort text created with TI-Writer. It was authored by Jerry Keisler of the Paris, Texas, TI user group. We found it in the newsletter of the Johnson Space Center User Group (JUG).

Have you ever wanted a quick way to

sort selected information, even if the information requires more room than is available in computer memory? I have. I also wanted to sort just part of a report that contained tabulated information and leave the rest of the report intact.

Using the tab function of TI-Writer, with Word Wrap off, you can enter such things as lists of titles in a series of magazines using separate columns for language (XBASIC, E/A, etc.), type of program (utility, educational, game, etc.), page number, issue and article title. You can even provide an introduction and define key symbols at the top along with column headings.

By including only the columns required for the sort, 24K bytes in files larger than 24K can be sorted. This is done in the following way:

1. The top unsorted lines are moved from the OLDFILE in drive 1 to disk drive 2 in a relative, fixed 80 format file called TEMPFILE.

2. Information to be sorted is extracted from OLDFILE and put into an array along with the line (record) number. These lines are also transferred from OLDFILE to TEMPFILE intact.

3. The bottom, unsorted lines are moved to TEMPFILE.

4. The array is sorted.

5. The top unsorted lines are moved from TEMPFILE to your NEWFILE in disk drive 1.

6. The sort array is read from top to bottom. The record number, stored in step 2, is extracted from the first array element. That record is pulled from the TEMPFILE and placed in NEWFILE as the next line. This continues until all sorted files are read from the array.

7. All bottom, unsorted lines are moved from TEMPFILE to NEWFILE.

One limitation of this program is that no more than 8000 bytes or 300 lines can be sorted at one time. This is because of the size of string memory and the speed of an Extended BASIC sort slows down dramatically with over 300 items.

It should be noted that the first column in TI-Writer files is zero and the tab set function can be used to find which columns you want to sort.

The program requires XBASIC, two
(See Page 43)

User Notes

(Continued from Page 42)

```
disk drives and a memory expansion.
100 DIM A$(300)!186
110 DISPLAY AT(1,4)ERASE ALL:
:"TI-WRITER TEXT SORT":
by Jerry Keisler": : "PRIMARY
AND SECONDARY SORT.": : "IND
ICATE FIRST AND LAST LINE":
TO BE SORTED." !005
120 DISPLAY AT(10,1): "FIRST
COLUMN = 0": : "SEC SORT FIRS
T COL=99 TO": : "SKIP.": : "EN
D LINE = 999 FOR SORT TO": :
"FND." !195
130 DISPLAY AT(20,1): "DISK2
FILE IS TEMPFILE": : "PRESS E
NTER": : ACCEPT AT(22,13)BEE
P: Q$ !074
140 DISPLAY AT(1,10)ERASE AL
L: "TEXT SORT" !228
150 DISPLAY AT(3,1): "SOURCE
NAME: DSK1.": : "OUTPUT NAME:
DSK1.": : "** SORT ORDER **":
: "1st FIRST COLUMN: 0": "SO
RT INC COLUMNS: 1": : "START
LINE: 1" !184
160 DISPLAY AT(13,9): "END LI
NE: 999": : "2nd FIRST COLUMN
: 0": "SORT INC COLUMNS: 1" !
148
170 ACCEPT AT(3,19)BEEP SIZE
(-10): SN$ : : IF Q$ > "N" THEN
DISPLAY AT(5,19)SIZE(-10): S
N$ !244
180 ACCEPT AT(5,19)BEEP SIZE
(-10): ON$ !143
190 ACCEPT AT(9,19)BEEP SIZE
(-2)VALIDATE(DIGIT): FC1 : : F
C1=FC1+1 : : IF FC1>80 THEN 1
90 !000
200 ACCEPT AT(10,19)BEEP SIZ
E(-2)VALIDATE(DIGIT): IC1 : :
IF IC1<1 THEN 200 ELSE IF FC
1+IC1>81 THEN 190 !000
210 ACCEPT AT(12,19)BEEP SIZ
E(-3)VALIDATE(DIGIT): L1 !159
220 ACCEPT AT(13,19)BEEP SIZ
E(-3)VALIDATE(DIGIT): L2 : : I
F L2=999 THEN 230 ELSE IF L2
<L1 THEN 210 ELSE IF L2-L1>2
99 THEN L2=L1+299 : : DISPLAY
AT(13,18)SIZE(-4): L2 !043
230 ACCEPT AT(15,19)BEEP SIZ
E(-2)VALIDATE(DIGIT): FC2 : :
FC2=FC2+1 : : IF FC2=100 THEN
250 ELSE IF FC2>80 THEN 230
```

```
!175
240 ACCEPT AT(16,19)BEEP SIZ
E(-2)VALIDATE(DIGIT): IC2 : :
IF IC2<1 THEN 240 ELSE IF IC
2+FC2>81 THEN 230 !000
250 DISPLAY AT(18,1): "IS THI
S CORRECT? N" : : ACCEPT AT(1
8,19)BEEP SIZE(-1)VALIDATE("
YN"): Q$ : : IF Q$="N" THEN 17
0 !006
260 !**LOADING FILE !021
270 DISPLAY AT(18,1): "ARE DI
SKS IN DRIVES 1 2 FE" : : AC
CEPT AT(18,28)BEEP SIZE(-1):
Q$ !209
280 F,N=0 : : DISPLAY AT(18,1
): " LINE #": : : " 8000 300
MAX": " BITS LINES SORT" !15
1
290 OPEN #1: "DSK1."&SN$,DISP
LAY ,VARIABLE 80,INPUT !071
300 OPEN #2: "DSK2.TEMPFILE",
RELATIVE, FIXED 80,OUTPUT !23
2
310 PRINT #2,REC 0: ON$ !148
320 IF EOF(1)=1 THEN 430 !14
9
330 INPUT #1: B$ !188
340 F=F+1 : : DISPLAY AT(18,1
0)SIZE(-4): F !169
350 PRINT #2,REC F: B$ : : IF
L1>F OR L2<F THEN 320 !006
360 F$=STR$(1000+F): : N=N+1
!155
370 IF FC2=99 THEN A$(N)=SEG
$(B$,FC1,IC1)&SEG$(F$,2,3): :
GOTO 390 !107
380 A$(N)=SEG$(B$,FC1,IC1)&S
EG$(B$,FC2,IC2)&SEG$(F$,2,3)
!108
390 L=LEN(A$(N))+L : : Q$=SEG
$(A$(N),1,27): : DISPLAY AT(2
1,1): USING "#####": L,N
: : DISPLAY AT(24,1): Q$ : : IF
L<7920 THEN 320 !066
400 FOR DIS=1 TO 4 : : DISPLA
Y AT(2,1): : DISPLAY AT(2,1)B
EEP: "TERMINATED BY BYTE SIZE
": : NEXT DIS !244
410 L2=F : : DISPLAY AT(13,24
)SIZE(-4): L2 !094
420 GOTO 320 !144
430 CLOSE #1 !151
440 N=N-1 !022
450 CLOSE #2 !152
460 CALL SORT(A$(),N)!241
```

```
470 !**SAVING SORTED FILE !2
08
480 OPEN #1: "DSK1."&ON$,DISP
LAY ,VARIABLE 80,OUTPUT !168
490 OPEN #2: "DSK2.TEMPFILE",
RELATIVE, FIXED 80,INPUT !131
500 DISPLAY AT(21,1): : "RECO
RD LINE": : "SAVING SORTED FI
LE" !088
510 IF L1=1 THEN 540 !080
520 FOR I=1 TO L1-1 : : LINPU
T #2,REC I: B$ : : PRINT #1: B$
: : IF I=F THEN 610 !240
530 DISPLAY AT(21,7): USING "
####": I : : NEXT I !055
540 FOR I=L1 TO L2 !063
550 J=I-L1+1 : : RE=VAL(SEG$(
A$(J),LEN(A$(J))-2,3)): : DIS
PLAY AT(21,1): USING "##### #
####": RE,I !184
560 INPUT #2,REC RE: B$ !229
570 PRINT #1: B$ : : IF I=F TH
EN 610 !222
580 NEXT I !223
590 FOR I=L2+1 TO 999 : : LIN
PUT #2,REC I: B$ : : PRINT #1:
B$ : : IF I=F THEN 610 !108
600 NEXT I !223
610 CLOSE #1 !151
620 CLOSE #2 !152
630 DISPLAY AT(24,1)BEEP: "EN
D" : : FND !045
640 SUB SORT(A$(),N)!N=# OF
FILES TO BE SORTED !201
650 DISPLAY AT(24,1): "SORTIN
G" : : P=1 : : L(P)=1 : : R(P)=
N !239
660 IF P<=0 THEN 850 !024
670 LB=L(P): : RB=R(P): : P=P-
1 !212
680 IF RB<LB THEN 660 !050
690 I=LB : : J=RB : : T$=A$(I)
!134
700 IF J<1 THEN 730 !220
710 IF T$>=A$(J) THEN 730 !23
5
720 J=J-1 : : GOTO 700 !157
730 IF J>I THEN 750 !064
740 A$(I)=T$ : : GOTO 820 !08
9
750 A$(I)=A$(J): : I=I+1 !130
760 IF I>N THEN 790 !100
770 IF A$(I)>=T$ THEN 790 !0
39
780 I=I+1 : : GOTO 760 !214
```

(See Page 44)

User Notes

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```

790 IF J<=1 THEN 810 !058
800 A$(J)=A$(I):: J=J-1 :: G
OTO 710 !030
810 A$(J)=T$ :: I=J !037
820 P=P+1 :: IF I-LB>=RB-I T
HEN 840 !153
830 L(P)=I+1 :: R(P)=RB :: R
B=I-1 :: GOTO 680 !002
840 L(P)=LB :: R(P)=I-1 :: L
B=I+1 :: GOTO 680 !246
850 SUEEND !168

```

Version 3.1 of Disk Labeler

Robert Neal, of Romeoville, Illinois, and the author of the original Disk Labeler program that appeared in last month's MICROpendium, writes to tell us of version 3.1. The code for this differs considerably from the version that we published, so we're including the entire listing here. Version 3.1 features are the ability to include the date that the label was printed, which is useful for determining the last time the label was updated. Also, the number of files on the disk is also printed. The user may also select which drive to catalog.

Neal noticed an error in last month's program in line 230. As published, the line sets the line space at 3/72 of an inch when it should be 6/72 of an inch. To correct this, replace &CHR\$(3) with &CHR\$(6).

"I think you'll also find this version is much easier to modify in that all the printer codes are included as variables, therefore not requiring users to search through the code to find all the printer codes that need to be changed."

```

1 ! ***** !23
5
2 ! ** DISK LABEL V3.1 ** !03
0
3 ! ** by ROBERT NEAL ** !14
8
4 ! ** TI Users Group ** !13
5
5 ! ** of Will County ** !18
6
6 ! ** ** !07
5
7 ! ** THIS PROGRAM ** !05
9
8 ! ** IS _FREE_ ** !21

```

```

3
9 ! ***** !23
5
100 DIM FN$(127),SZ$(127),PT
$(127)!193
110 TYPE$(1)="D/F" :: TYPE$(
2)="D/V" :: TYPE$(3)="I/F" :
: TYPE$(4)="I/V" :: TYPE$(5)
="PRO" !186
120 FL$="##### ### ##
" !009
130 TL1$="Avail:#### Used:##
## ## Files #####
###" !254
140 TL2$="#####
###" !237
150 OPEN #1:"PIO" !253
160 LF$=CHR$(27)&CHR$(65)&CH
R$(6)!** SETS LINE FEED TO
6/72 INCH !227
170 COND$=CHR$(15)!** PUTS
PRINTER INTO CONDENSED PRINT
--17 CHAR/INCH !053
180 SUBON$=CHR$(27)&CHR$(83)
&CHR$(1)!** TURNS SUBSCRIPT
MODE ON !162
190 SUBOFF$=CHR$(27)&CHR$(84)
)!** TURNS SUBSCRIPT MODE O
FF !042
200 RESET$=CHR$(27)&CHR$(64)
!010
210 DISPLAY AT(2,1)ERASE ALL
:" DISK LABEL:"
=====": : by
: Bob Neal": " Version
3.1" !003
220 IF DATE$<>"" THEN 250 !1
27
230 DISPLAY AT(10,1):"ENTER
TODAYS DATE: /" :: DISPLAY
AT(11,20):"-- --" !195
240 ACCEPT AT(10,20)SIZE(2):
MO$ :: ACCEPT AT(10,23)SIZE(
2):YR$ :: DATE$=MO$&"/"&YR$
!178
250 DISPLAY AT(15,1)BEEP:"Th
e Disk to be Labeled is in":
"Which Drive (1-5)? 0 to QUI
T" !114
260 CALL KEY(0,K,S):: IF S=0
OR K<48 OR K>53 THEN 260 EL
SE IF K=48 THEN PRINT #1:RES
ET$ :: CLOSE #1 :: STOP !080
280 K=K-48 :: DISPLAY AT(19,
3):"Reading from Drive #";K

```

```

!042
290 OPEN #2:"DSK"&STR$(K)&".
",INPUT,RELATIVE,INTERNAL !
133
300 FOR X=1 TO CNT :: FN$(X)
,SZ$(X),PT$(X)=" " :: NEXT X
!185
310 CNT=0 !156
320 INPUT #2:A$,J,J,K !156
330 A$=RPT$(" ",10-LEN(A$))&
A$ !189
340 FOR X=1 TO 127 !178
350 INPUT #2:FN$(X),A,SZ,S !
032
360 IF LEN(FN$(X))=0 THEN 40
0 !014
370 SZ$(X)=STR$(SZ):: SZ$(X)
=RPT$(" ",3-LEN(SZ$(X)))&SZ$
(X)!236
380 A=ABS(A):: PT$(X)=TYPE$(
A):: IF A=4 AND S=254 THEN P
T$(X)=TYPE$(5)!089
390 NEXT X !238
400 CNT=X-1 :: CLOSE #2 !200
410 PRINT #1:SUBOFF$&COND$&L
F$:: PRINT #1,USING TL1$:ST
R$(K),STR$(J-K),CNT,DATE$,CH
R$(14)&A$ !102
420 PRINT #1:SUBON$&RPT$("="
,58):: LC=2 !178
430 FOR X=1 TO CNT STEP 3 !2
24
440 IF LC>9 THEN 450 ELSE 47
0 !050
450 PRINT #1:":":": !139
460 LC=2 :: PRINT #1:SUBOFF$
:: PRINT #1,USING TL2$:CHR$
(14)&A$ :: PRINT #1:SUBON$::
: PRINT #1:RPT$("=",58)!206
470 PRINT #1,USING FL$&PL$&P
L$:FN$(X),SZ$(X),PT$(X),FN$(
X+1),SZ$(X+1),PT$(X+1),FN$(
X+2),SZ$(X+2),PT$(X+2):: LC=L
C+1 !172
480 NEXT X !238
490 FOR X=1 TO 12-LC :: PRIN
T #1:":":": NEXT X :: GOTO 21
0 !111

```

Lister revisited

Ray Kazmer, of Sylmar, California, provides the following file-listing program. It is the third to be published by MICROpendium (one was published last month), but it is the easiest to use and the

(See Page 45)

```
100 CALL CLEAR :: @=0 :: [=1
:: ]=2 :: _=3 :: \=4 :: CAL
L SCREEN(15):: CALL CHAR(128
,RPT$( "F", 16)):: CALL COLOR(
```

```

13,7,[ ]:= Q$=RPT$(CHR$(128),
30):: CALL HCHAR([ ,[,128,32)
!058
110 D$="1" :: DISPLAY AT([,8
):" FILELISTER 2 ";:: DISPLA
Y AT([,8):"BY: RAY KAZMER";:
:"FOR D/V, D/F, I/F, I/V FIL
ES";: "ENTER: DRIVE # (1-5;
0=QUIT)" !139
120 DISPLAY AT(8,8)BEEP: "DIS
"&D$&". " : ACCEPT AT(8,11)V
ALIDATE("(012345")SIZE(-[): D$
:: IF D$="" THEN D$="1" ::
GOTO 120 ELSE IF D$="0" THEN
350 !051
130 J$=" DEVICE ERROR " ::
ON ERROR 330 :: OPEN #[: "DISK"
&D$&".",INPUT ,RELATIVE,IN
TERNAL :: INPUT #[: F$,T,S,L
!134
140 DISPLAY AT(6,[)BEEP: "
ENTER: FILENAME";: "
DISK"&D$&". "&N$ :: ACCEPT
AT(8,13)SIZE(-10): N$ !255
150 FOR X=[ TO 127 :: INPUT
#[: F$,T,S,L :: IF F$=N$ THEN
170 ELSE IF LEN(F$)=0 THEN
320 !143
160 NEXT X :: IF F$<>N$ THEN
320 !000
170 T=ABS(T):: IF T<[ OR T>\
THEN J$=" WRONG FILETYPE "
:: GOTO 330 !000
180 ON T GOTO 190,200,210,22
0 !230
190 OPEN #[: "DISK"&D$&". "&F$,
SEQUENTIAL,DISPLAY ,INPUT ,F
IXED L :: DISPLAY AT(11,[):"
FILE = DISPLAY FIXED";L ::
GOTO 230 !013
200 OPEN #[: "DISK"&D$&". "&F$,
SEQUENTIAL,DISPLAY ,INPUT ,V
ARIABLE L :: DISPLAY AT(11,[
):" FILE = DISPLAY VARIABLE"
;L :: GOTO 230 !190
210 OPEN #[: "DISK"&D$&". "&F$,
SEQUENTIAL,INTERNAL,INPUT ,F
IXED L :: DISPLAY AT(11,[):"
FILE = INTERNAL FIXED";L :
: GOTO 230 !168
220 OPEN #[: "DISK"&D$&". "&F$,
SEQUENTIAL,INTERNAL,INPUT ,V
ARIABLE L :: DISPLAY AT(11,[
):"FILE = INTERNAL VARIABLE"
;L !129
230 J$="PRINTER OFF-LINE" ::

```

[illegible]

PRBASE users who have the PRBASE Utilities program by John Johnson, will
(See Page 46)

User Notes

(Continued from Page 45)

find the following modifications to the PRBASE LOAD program to be of value. (PRBASE is a popular database manager written by William Warren). The modification was done by Mike Huhman and Doug Gootee of the Jackson County 99ers of Kansas City, Missouri.

It is recommended that you copy the PRBASE LOAD and PRBUTL/BAS programs to a separate disk before attempting these modifications.

1. Load the LOAD program. RESequence it so that it is numbered 100-200.

2. Add the following program lines to change the screen color and display the short menu.

```
171 CALL CLEAR :: FOR Z=1 TO
  8 :: CALL SCREEN(5):: CALL
  COLOR(Z,16,1):: NEXT Z
172 DISPLAY AT(2,9)ERASE ALL:
  "PRBASE LOADER" :: CALL HCH
  AR(4,1,45,32)
173 DISPLAY AT(6,1): "PRESS"
  :: DISPLAY AT(8,3): "1. To Lo
  ad PRBASE" :: DISPLAY AT(10,
  3): "2. To Load Copy Utilitie
  s"
174 DISPLAY AT(12,3): "3. To
  Quit"
```

3. Line 175 is the one that reads the menu item selected and transfers control to the proper part of the program. The call is set to only accept keys 1, 2 or 3.

```
175 CALL KEY(0,K,S):: IF S=0
  THEN 175 ELSE IF K<49 OR K>
  51 THEN 175 ELSE DISPLAY AT(
  14,14):CHR$(K):: ON K-48 GOT
  O 178,176,177
```

4. Lines 176 and 177 are used to run the copy utilities or end the program, selections 2 and 3 on the menu.

```
176 DISPLAY AT(2,4): "PRBASE
  (COPY UTILITIES" :: RUN "DSK1
  .PRBUTL/BAS"
177 END
```

5. Resequence the program again. It should now be numbered 100-270. Save the program as LOAD.

6. Load the PRBUTL/BAS program. Changes lines 100 and 150 as shown below.

```
100 CALL LINK("CHARD"): : CA
  LL SCREEN(5):: DISPLAY AT(6,
  1): "" :: FOR A=0 TO 14 :: CA
  LL COLOR(A,16,1):: NEXT A ::
```

```
OPTION BASE 1 :: ON ERROR 1
  280
```

```
150 K=1 :: L=2 :: DISPLAY AT
  (2,4)ERASE ALL: "PRBASE COPY
  UTILITIES" :: CALL HCHAR(4,1
  ,45,32):: CALL HCHAR(21,1,45
  ,32)
```

Line 100 is changed to clear the one line on which the loading message is displayed. Line 150 inserts "COPY" and adjusts the column numbers accordingly.

Test your modified programs with a scratch disk before copying them to your PRBASE disk.

Remote joystick

This comes from TopIcs, the newsletter of the Los Angeles 99ers. It was written by Chick De Marti.

If you have an Atari 2600 game system, the remote control joysticks for the Atari and a joystick adapter for the TI, you have all you need to free your joysticks from the TI console.

The power supply from the Atari 2600 is plugged into the remote receiver and the two nine-pin plugs from the receiver are connected to the dual joystick adapter. Each hand-held unit requires a 9-volt battery. That's all there is to it. The remote

units are priced in the \$12-\$15 range.

No disk name

John Willforth, writing in the Peripheral, the newsletter of the Pittsburgh TI user group, offers the following advice:

Once I accidentally missed typing in the disk name when I began to move files from one disk to another. Everything went fine until I went to print a (catalog) label. The disk couldn't be cataloged, copied or even a name added.

What could I do? Well, if you know the disk is, let's say DSDD, just get one with the same characteristics and insert it as if you were going to rename it. Do everything you are asked by the disk manager up to the point where the new name is about to be written to the disk. Then pull the disk from the drive and insert the disk that can't be cataloged and proceed. The previously unnamed disk will have a name and can then be dealt with in the usual manner.

User Notes is a column of tips and ideas designed to help readers put their computers to better use. The information provided here comes from many sources, including TI user group newsletters. MICROpendium pays \$10 for any item sent in by readers that appears in this column. Mail User Notes to: MICROpendium, P.O. Box 1343, Round Rock, TX 78680.

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